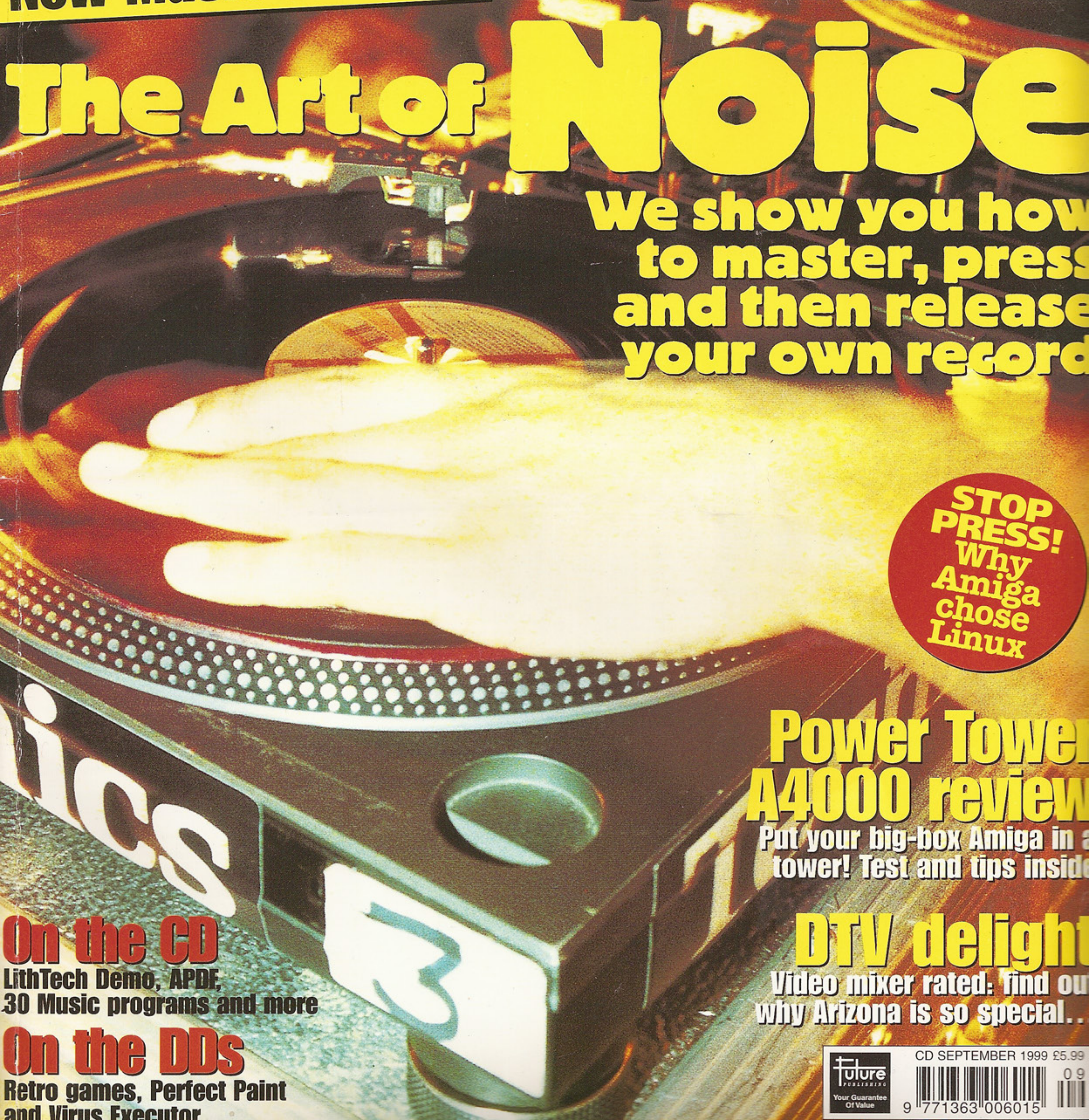
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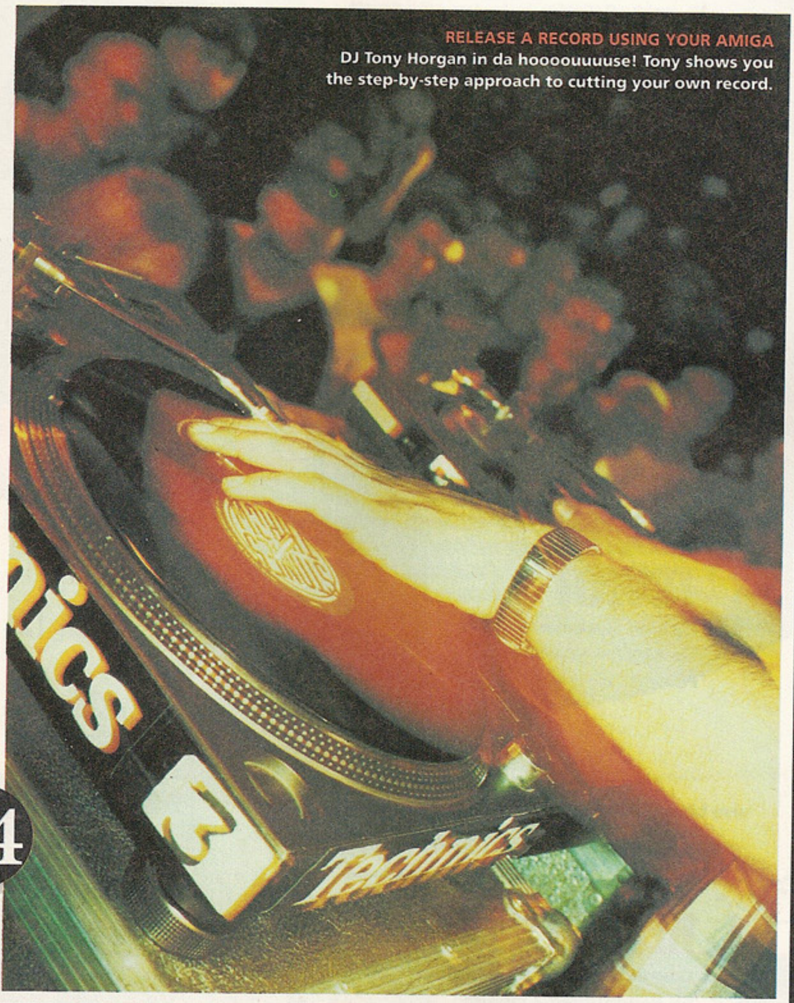
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Month in View

Ben Vost thinks it's hot in the *AF* offices, and he's not the only one…



RELEASE A RECORD USING YOUR AMIGA
DJ Tony Horgan in da hoooouuuuse! Tony shows you the step-by-step approach to cutting your own record.

14



Ben Vost
Editor

Seems a bit daft, doesn't it? I'm writing this message to you all on July 8th. By the time you read this it will probably be the first week of August (on average) and the magazine is dated September. What I'm trying to say is that the blisteringly hot weather we've been having this week will probably only be a fond memory by the time you read this, and not the sticky, airless, work-demotivating yuck that it is now. No, this isn't going to be another "time's different on a mag" kind of thing – we'll leave that until our Christmas issue, lucky you – it's merely a comment on all the PMT (Pre-Millennial Tension) doing the rounds at the moment. What with mis-translations of Nostradamus predicting the end of the world for this month, the usual crazies talking about the rapture and the unbearable heat, there's definitely something in the still air. Still, the thunderstorms have been memorable, even if only for the running around switching off Amigas and unplugging them from the wall.

Other than that, I've been busy interviewing all manner of lovely people for the job of replacing Mark. The interview process is pretty easy; most of the candidates are far more pleasing to the eye than Mark was anyway, so there's only the vital questions, "Do you drink?", "Do you smoke?" and "Can you make tea?" to be asked (I expect a yes, no, yes response, by the way), apart from all the boring ones about whether they're actually any good at subbing.

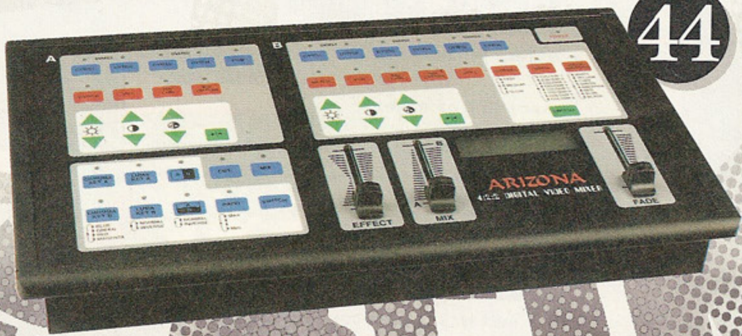
As for content for this issue, I'm pretty pleased with the stuff we've got, although I was hoping to fit Tornado in too, but I'm holding it back for another four weeks to give me more of a chance to play with it and make sure it really is the finest bit of 3D software you've ever seen on the Amiga. Still, we've got loads of lovely stuff for you anyway, including an out-of-the-blue review of a cunning video mixer and the long-awaited Power Tower for the A4000 model of Amiga. See you at the show if you're reading this there, otherwise in four weeks' time. AF

THE RIGHT TYPE
The rather spanking "fonty" background down here is to advertise the presence of Richard Drummond's rather splendid explanation of all things font-tastic.

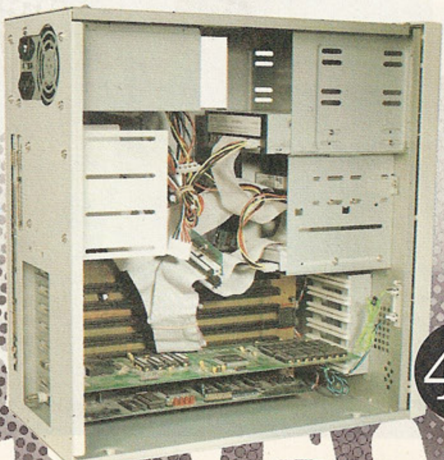
24

ARIZONA VIDEO MIXER
Pat McDonald shoved this under our noses and said, "Look, nice! Inputs and outputs!" and we were hooked.

44



POWER TOWER A4000
Looks the same on the outside as Power's original tower for the A1200, but this is intended for "serious" machines…



48

AMIGA FORMAT

Contents

ISSUE 127 SEPTEMBER 1999

COVER STORY

p14



The Art of Noise

After writing music tutorials for *Amiga Format*, **Tony Horgan** decided it was time to show that he knew what he was talking about, and so he released a single. This in-depth feature discusses the processes involved, as well as all the ups and downs that he went though. For anyone interested in making music with their Amiga, it's an essential read.

CD-ROMS



COVERDISKS



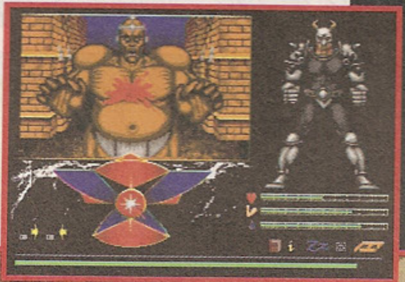


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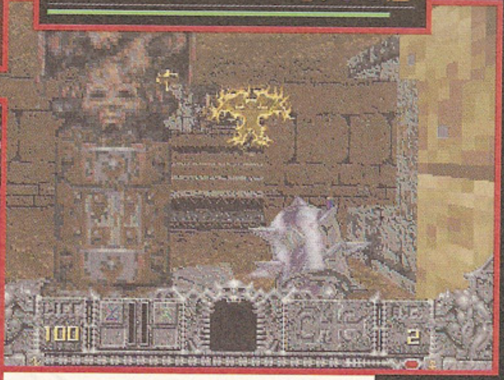
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SCREENPLAY











From old skool RPGs to first person blasters to the games of tomorrow, whatever you want is in this month's screenplay.



WHAT'S UP?

QNX vs. Linux
Not much room for other news as we report on the latest shocking decision

phase 5 plans
phase 5 have altered their plans for their new G3-based accelerators

RC5 update
Join in the quest to beat the world!

WORLD NEWS

Linux vs. QNX

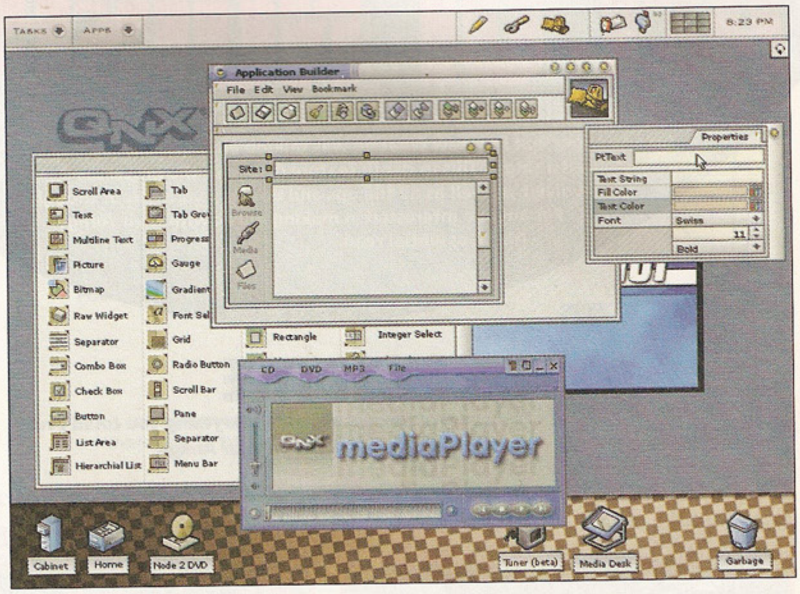
A move that stunned many people this week (July 8/9th) was prompted by QNX posting details of an Amiga development program to the web. Amiga swiftly replied by publicly stating that QNX was no longer going to be the Amiga's new kernel, but that they'd be using the free Unix-alike Operating System, Linux.

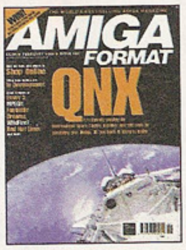
The kneejerk reaction was heard around the world as Amiga owners everywhere posted that the new Amiga was dead and that Microsoft had won again, but these statements were swiftly followed by retractions as people realised that the end of their world wasn't actually nigh.

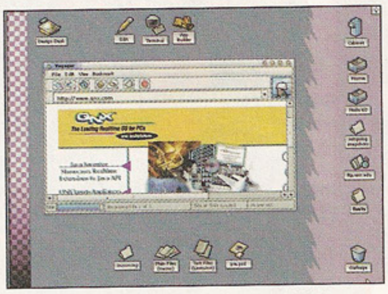
We've covered QNX extensively in this mag (see AF120), but while Linux might well not have the panache that QNX has going for it, it has been worked on since 1992 by a great many people, turning what was once a hobby for originator Linus Torvalds into a worldwide distributed effort to create a free Operating System. However, the deal with Amiga does not include the whole of the Linux operating system, which would make the new Amiga little different to machines currently being offered by companies like Compaq. It would also mean that Amiga's dream of a completely scalable operating system suitable for PDAs (Personal Digital Assistants) and top-of-the-range broadcast servers would be dead in the water. Instead, Amiga have opted solely for the kernel – the very heart of Linux and similar in intent to the Amiga's current Exec – as the basis for their soon-to-be-released OE or Operating Environment. When questioned about the decision, Jim Collas, head of Amiga, said that "there isn't anything that QNX can do that Linux can't, you just have to search harder for it".



QNX released the three screenshots to the right on the day before Amiga made their announcement.









The screenshots of the new QNX OS look great, but what future does it have?

QNX immediately responded by posting a response to Amiga's statement saying that they were disappointed about not being chosen as the next OS.

> *"The kneejerk reaction was heard around the world as Amiga owners everwhere posted about the new Amiga"*

The ramifications of this new about-turn by Amiga need futher explanation, so, on your behalf, we talked to Jim Collas and Dan Dodge about the situation. There's plenty of text here, but since there are so many ill-informed opinions being put about on the net, we thought you should have most if not all of what was said to be able to better make up your minds:

Talking heads

What have the Amiga Format staff been doing this month?



Ben Vost
Editor

Well, everything was going fine. I'd actually been on holiday for the first time in six years and then all this stuff happened on Friday and I haven't been to bed since. I NEED ANOTHER HOLIDAY!



Richard Drummond
Staff Writer

I've been secretly practising with a voice tutor for the U.K. Karaoke finals. After belting out Steppenwolfs' *Born to be Wild* I felt my voice falter and was later diagnosed with tonsillitis.



Mark Wheatley
Prod. Editor

I've been beavering away on several mags as well as AF in a vain attempt to clear my overdraft. what little free time I've had, I've been out on the golf course releasing pent up stress.



Colin Nightingale
Art Editor

Following on from Tony Horgans music feature. I've been out this month playing the toilet circuit with my Phil Collins tribute band, *No Racket Required*. Expect chart action soon, slap head fans.

Jim Collas speaks:



JC: This QNX announcement kind of blindsided us.

AF: We had already heard rumours. Couldn't you have said something sooner?

JC: I called up their president – we were supposed to touch base before the announcement.

AF: Doesn't QNX have significant technological advantages over Linux?

JC: To tell you the truth, when we first reviewed Linux we came to the same conclusion. In fact, Linux beat QNX on some very important transactional networking-type of operations. It is just as efficient. What we're doing is putting in resources to come up with a really clean OS kernel, with an Amiga flavour that will use Linux as the underpinning and foundations of our Operating Environment, and we've also had plenty of discussions with Linus Torvalds to understand just what is happening in the Linux community. Things like "embedded" and "how small can it get?".

AF: We were aware of an RTOS implementation of Linux made by a researcher, but it was a hobbyist thing and he was going back to university and leaving it.

JC: There are probably a dozen people working on Linux in any given area you may think that QNX has an advantage. The difficulty with Linux is finding the pieces. The other thing I can tell you is that the people in the Linux community we are working with are going to be able to give us exactly what we need. To summarise: the end solution that we deliver will be better than if it was based on QNX. On top of that, there are all the drivers for printers, audio, graphics, multimedia - basically everything we need to tap into for peripherals. What we were finding was that it was very difficult to get support for QNX.

When the first Amiga came out, it didn't look anything like anything else on the market. We need to do that again. In order to do that we have to take the emphasis off things like the OS kernel and put it on things like the next generation user interface, a distributed computing environment that allows all the computing devices in a house to actually act as one large virtual computer with the functionality and capabilities of each individual device contributing to the overall environment. That's what's revolutionary. That's what's going to change how computing works today.

AF: But that will still require a scalable OS. If you're going to have to get variants of the Linux kernel that will suit, will they be as compatible?

JC: Linux is a lot more scalable than people think it is. When I spoke to Rick LeFaivre and Allan Havemose they said that we could do everything we need to do with Linux, rather than QNX.

AF: Is part of the reason for Linux, and your discussions anything to do with a hardware partnership with Transmeta?

JC: No comment. *(We're pretty sure that Transmeta is the ideal solution for Amiga. There are rumours that its unique code-morphing feature means that it can be x86-compatible and natively execute Java code. The fact that AmigaSoft is going to heavily rely on Java, makes this our best choice. We can also make the assumption that this switch didn't take place overnight, that they have chosen a hardware partner, and that this is an informed decision).*

AF: What about the GPL status of Linux? How are you going to make any money from it if you have to give it away, along with its source code?

JC: The Linux pieces that we use will obviously be open source, and any enhancements we make will obviously go back into the Linux community. However, the stuff we make will sit on top of it, and that's what we will licence.

AF: But won't the fact that others have access to this base level mean it'll be difficult for Amiga to stay in advance technologically?

JC: People are looking at this like any other OS. We're not looking to just bring out another platform. If you just want another platform, then there's Linux, BeOS and now QNX out there. The truth is that if anyone truly believes we can just go head-to-head with Windows and come out with a similar platform, they really need to rethink. What we're trying to do is change the face of computing. In order to do that we're using the operating system components as a foundation, but that's not where the innovation is going to occur.

AF: Holger Kruse says that Linux's TCP implementation is seriously flawed, especially when compared to QNX. PCWeek did tests comparing Linux's performance as a web server against NT and it was woefully underpowered. QNX's TCP support is supposed to be second to none – since networking is so vital to the new Amiga, why go with Linux?

JC: I don't know all the technical details to respond to that accurately, but we're very focused on the specific performance that's required for our Operating Environment, not just on general web serving, etc. The benchmarking that we did showed that Linux does very well for the type of things we need it to do.

AF: Given that the OE will have Linux as its base does this mean that all the existing Linux software can be recompiled for the new Amiga, and if so, how will software vendors be able to compete with free art packages, databases, music packages and the like?

JC: You will be able to recompile Linux programs for the new Amiga, but they won't be optimised. The best programs will be Amiga-native.

AF: Is this not changing the emphasis from "exciting technology"?

JC: Technological decisions always have to go hand-in-hand with business ones. The best technology doesn't always win, in fact it rarely does. Commodore had great technology in the form of the Amiga, but they were crushed by inferior technology, in the form of Wintel, because Wintel had market momentum. I don't want that to happen again. It doesn't matter how good a technology we have, we cannot put ourselves in a position where we get crushed by external market momentum. My feeling is that we have to tap into the Linux market momentum to try and guarantee our success, then do unique and exciting things on top of that.

AF: Is the new OE going to only be based on Linux's kernel or is it going to take more from the GNU/Linux OS, because you have a dichotomy. If it's only the linux kernel then you can't ride the "wave of momentum" that Linux has, because the OE won't be Linux, and if it is more of the Linux OS, you can't do all the things you've promised.

JC: It is a very careful balance. If we don't leverage enough of the Linux momentum, we put ourselves at serious business risk. If we take too much of it, we basically start killing off innovation.

AF: This is the fourth direction change since Gateway bought the Amiga, each one is putting it further and further behind schedule. Why should we trust anything you are saying now?

JC: Two years before I took over Amiga, Gateway dabbled and never had a serious plan relative to Amiga. This is the first direction change I've made since I took over five months ago. What I inherited was a legacy of bad decisions, and a community that has lost patience. This gives me very little room for error or correction.

AF: You said in May that you didn't want to bring any baggage from the past. Linux may be relatively new in the OS field, but surely it has its own baggage?

JC: Yes, it does, but remember it will only be underpinning the great stuff we'll do. What we'll have won't look or behave like Linux. You will be able to run an old X Windows app if you want to, but we don't want it to stifle our innovation.

AF: Why was Linux given a third chance? You say you reviewed it in Nov/Dec, but continued with QNX, again in March, but continued with QNX. Now you're saying that Linux is the way to go, so what changed?

JC: Linux has continued to gain momentum. Some people look at that as a negative and say that we just want to hitch to a bandwagon, but we also saw it as a huge threat. Hardware suppliers were asking why we weren't using Linux since it was the only other platform they were willing to support.

AF: Earlier on this year you said that hardware didn't matter, that it was another component, but now you seem to have chosen the OS for the machine based in part on what processor you'll be using. Why's that?

JC: We could have pulled this off without worrying about the hardware, but when you stumble across a solution that is very compelling you have to re-evaluate your situation. This combination works really well and gives us something unique, so why not use it?

AF: It just seems like you've thrown away all the stuff you've worked on.

JC: All the stuff we're working on has always been above the OS level and very portable. Java will still work, AmigaObjects will still work, so we're not really throwing anything away, we're really just going to put it on top of a different foundation.

Continued overleaf ➡

Dan Dodge speaks:



AF: What prompted the sudden appearance of your Amiga developer page? I noticed a while ago that Amiga was off the main page.

DD: The removal of Amiga from the main page was probably coincidental - I didn't give a directive to do that. We went direct to the Amiga community because we presumed that we were no longer a platform solution, but we hadn't been officially informed.

At that point we felt that we were delivering a compelling solution. We honestly believe that we have a development group that has the same spirit as the Amiga community. This is the most exciting project that they have worked on in ten years.

We talked to those guys and we decided that we could do one of two things. We could walk away, or we could try to present a solution that we hoped that the base would accept. I anticipated that we would get some level of interest, but I didn't envision the wave of support that has come forth. We thought that a few people would kick it around and say that they'd have a look at it, but...

AF: Have you had many developers sign up?

DD: On Friday (July 9th - the day after QNX's announcement) we were signing up people every two minutes.

AF: Did Amiga's announcement make any difference to that?

DD: No. Some people actually posted again, saying that they wanted us to continue regardless. Basically because of the fact that I think people were concerned that we'd pull the plug.

AF: I assume you're going to carry on anyway?

DD: Oh yes, we'll carry on regardless.

AF: If Transmeta is part of the reason that Amiga are going to Linux, do you have any way of making sure that QNX will run on it?

DD: I have no information on Transmeta right now. Initially what we'll provide for the Amiga community will be x86-based because x86 is freely available, but we can provide PPC solutions as well. We also have SMP for PowerPC working. There's nothing stopping us from providing a compelling PPC solution, but I need a hardware partner.

AF: It wouldn't take long to do, presumably?

DD: It would probably add one to two months on where we are with x86. We licensed certain pieces of code that have some MMX opcodes in them that would need recoding. The code we write doesn't contain Intel assembly, but there have been certain multimedia licenses that would require a little bit of work.

AF: If the worst comes to the worst and Amiga say "we don't want you dealing with the Amiga, we don't want you dealing with the Amiga name", are you going to keep it on, selling it as a separate desktop OS?

DD: Well, first of all, Amiga doesn't own the users...

AF: No, but they do own the trademark "Amiga".

DD: And I have no intention of using their trademark. We were very careful in our posting to just say "Amiga community" and "Amigans". We're not asking users to "dump" Amiga and come to us. All we're saying is "Take a look at our solution, and if you believe it's in the spirit of the Amiga and you want to be part of that, then we'd love to have you. That doesn't mean that Amiga won't also provide a compelling solution. Some people look at this as though it's the end – I say it's not the end – for the first time in many years the community has two companies offering them a choice. I'd say that this is probably the high point of the last couple of years.

AF: We could draw parallels to the WarpUP/PowerUP situation for the classic Amiga's ppc boards. They caused a rift in the Amiga community. Aren't you worried that this situation will do the same?

DD: I'd be more bothered if the solutions we're proposing were similar. It's my belief that there are going to be such dramatic differences – the fact that one is going to be a Linux-based, mainstream solution and we're bringing in a purely technological solution. I believe that those that would go with us, wouldn't go with the Amiga anyway – they would have left it cold. So I don't see it as a split. I see it as those that would have left anyway, because they were unhappy, will now find something to go to.

AF: What about Jim's statement that Linux was chosen because of the amount of drivers available?

DD: First of all, if the intent is to produce an advanced multimedia computer, then you only need one graphics driver, one audio driver, one ethernet driver - you don't need hundreds of different ones. We are more than capable of producing high-quality drivers for any multimedia computer that would be brought out.

AF: However, there are peripherals where you do need more than one driver – like CD writers, printers, etc.

DD: We will post on our website the list of drivers that we will be providing for our solution. If the target were a PC as opposed to a multimedia computer, this driver issue would be huge because every single PC is different. We have lived in that space more than any other company. When we post the list of drivers that we have, it'll be awesome. We have a group of people that do nothing but drivers. We concentrate on doing high performance high quality drivers. For our traditional customers if a driver fails – it's really serious! For us the question is not "Do we have more drivers than Linux?", it's "Do we have the engineering resources, and the track record, to show that we could develop and deliver the necessary drivers to be successful?" I think the answer is clearly yes.

AF: How will you attract people who buy Amiga PDAs to QNX? Will you be making your own?

DD: Now we're into an area where I could really violate some NDAs and tell you some stuff that would rock you! (laughs) Our main business historically has been targetting major OEMs who are going after this space. I've been working on relationships with them for well over two years. Those deals we've signed will start to bear fruit in the next six months. Let me just say that we believe there will be other manufacturers delivering devices that will be compatible with what we're bringing to the Amiga community.

AF: Some people have posted that you're trying to "steal" the Amiga community because they're used to paying inflated prices for things?

DD: It is not the intention of this company to extract money from the Amiga community, and when the pricing model becomes available I think people will be very pleasantly surprised. I hope to be able to talk more about this in September. We don't want a profit centre, we want a symbiotic relationship. My company makes it's money from OEMs that ship consumer electronics devices. They're looking for a developer base, they're looking for third party applications, they're looking for companies that will become part of a community that helps enforce where they're going. That's what I think I bring to the Amiga base. It would have been nice to have done this with Amiga, but I'll do it anyway. We have done the work, and we are in a position where we're going to deliver.

AF: Any message for Amiga owners?

DD: They shouldn't look at this as a depressing time, the end of an era. They should look at this as an opportunity for them to voice their opinions to two companies who are both interested in providing a solution they want. It's always better to have some form of choice. At the end of the day, all I'm asking is that they make up their own minds.

100 Issues ago — AF27 October 1991

AMIGA FORMAT



We look at what was going on in the Amiga market 100 issues of *AF* ago...

- **Cover feature:** Add colour to your life. The lead feature talks about 24-bit colour and has reviews of TVPaint (85%), HAM-E (90%), and Professional ScanLab II (72%). There's also a piece about arcade games and their counterparts on the Amiga.
- **On the disks:** Still one disk, mirroring the games disk we have this issue, funnily enough, with arcade classics from the public domain!
- **News:** JPEG gets a mention for the first time in AF with news that ADPro will support the new format, rumours of a portable Amiga from Commodore and complaints about the tardy arrival of the A500 CD-ROM drive, Progressive Peripherals launch their 040 boards for the A2000 and A3000, and the arrival of the A500+ is mooted for before Christmas.
- **Prices:** The aforementioned 040 card for the A2000 will cost £1649+VAT including 4MB RAM and the necessary Kickstart 2 ROM.
- **Games reviewed included:** *Magic Pockets* (Renegade) 85%, *Blade Warrior* (Image Works) 74%, *Cruise for a Corpse* (Delphine) 90%, *Gauntlet 3* (US Gold) 63%, *Rodland* (Storm) 88%, *Robin Hood* (Millennium) 80%
- **Serious products reviewed:** *A-Max II* (Readysoft) 85%, *Snapshot Pro* (HB Marketing) 78%, *Big Alternative Scroller* (Alternative Image) 50%
- **Notes:** The very first house ad for a new title to be called *PC Format* was in this issue.
- **Pages:** 220
- **Cost:** £2.95

OPINION:

So, what can be seen from these interviews? The first thing to bear in mind is that QNX are resigned to the idea that they won't hold the reins for the Amiga, but that they will carry on regardless. Likewise, any user that wishes to use QNX will be able to, quite possibly on the new machine, if the new machine is based on Transmeta and its x86 compatibility is all it's cracked up to be, or QNX releases a new version for it. The one thing that's quite apparent is the fact that Amiga have lost a great deal of face over this issue, and, notwithstanding Jim Collas' assertion that it's not all his fault, a great many Amiga owners have turned their backs on the holy grail of the new Amiga, preferring instead to ally themselves with QNX's Amiga-user-friendly approach. The situation will no doubt change over the coming weeks, possibly even before you get to read this news piece, as Amiga plan to release a "Technological Brief" that will reveal many of their plans, and, perhaps more importantly, the reasons behind them. In any case, whatever gets decided won't affect your current Amiga at all – both QNX and Linux will be easy to port to a PowerPC-equipped Amiga still – and Amiga are adamant that it won't affect the on-sale date of the new machine. The full interview transcripts (there wasn't the room for them all here) will be available for your perusal on the next AFCD and floppies, and on the Amiga Format mailing list (see page 93 for further details) as soon as this issue is released.

product news... product news... pro

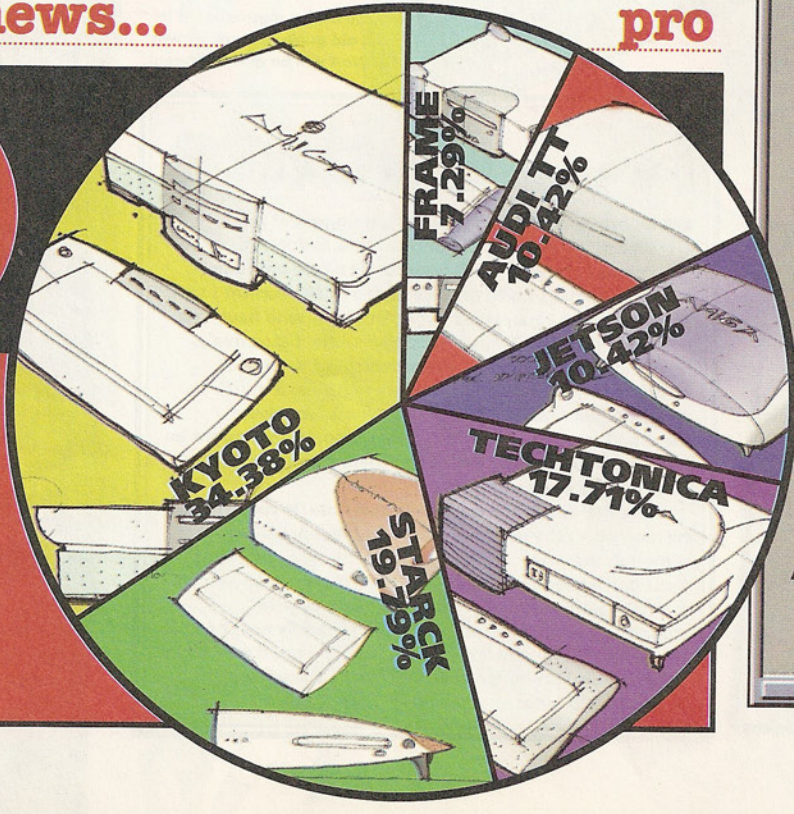
- Marcel Beck finally releases a full version of YAM 2 to an expectant audience. The new version doesn't have many new features over the seventh preview release, but it has cured bugs and consolidated the features it had.
- ImageFX 4 is now available for purchase from UK distributors Weird Science (0116 246 3800). The major new feature of this upgrade is the animation functions it now introduces as talked about in our WIP feature continuing on page 52. Prices are unavailable as yet.
- Amiga Forever 3 is about to be released. The new version of the Amiga emulator for the PC is supposed to be easier to use than ever, and also now features a full version of Kickstart and Workbench 3.1
- Staying with Cloanto, Personal Paint has received a minor upgrade to version 7.1b. It's available from Aminet in the biz/cloan drawer and will be on our CD with the next issue.
- GoldEd, the popular text editor is now at version 6.1.3. There are free upgrades from any full version 5 or 6. New features include tab cycling for all gadgets, improved navigation in listviews and custom rendering routines (increasing scrolling performance by up to 20%).
- STRICQ is now at version .1441. The author Doug McLaughlin has stated that the whole chat function is currently being rewritten to support multi-user chat better.
- There's an upgrade for Format Gold-rated NewsRog to version 1.7. The new version includes 45 new features and promises to be the best newsreader on any platform. Upgrades are free to registered users.
- PFS3 won't be at the World of Amiga show as planned as there have been reports of delays with its completion. It should, however, be available soon after.
- Amiga Format has received its beta version of Amiga OS3.5. We will have discussions with Haage & Partner and see if we can bring you a sneak preview of it in our next issue.

product news... pro

VOX POP

afb members were asked: Out of the new designs in the magazine last issue, which is your favourite?

CATEGORIES:
- Frame
- Audi TT
- Jetson
- Techtonica
- Starck
- Kyoto



Vital Horgan



I've been doing a bit of research, and made the startling discovery that the bosses at Amiga perform more U-turns every year than your average London cab driver does in the space of a month. And that's a lot.

OK, so I made it up, but it's probably true! And how do they think that makes us lot feel? Confident in their long-term strategies? Assured that this week's promise will be fulfilled? Sick and tired of the whole bleedin' soap opera? You bet.

Of course, this could all be quite meaningless by the time you read it, what with it having been written prior to the World of Amiga show. Maybe like last year, they'll back-track in the face of public pressure. Will we see them re-write the press releases on an hourly basis and end up telling everyone a different story depending on what they want to hear? I doubt it, but I wouldn't rule out anything these days. I mean, how many of those grand plans rolled out at WOA '98 have actually been followed up with action?

It's not that I'm against a new Amiga being based on a Linux kernal – I wouldn't pretend to know if that was a better foundation than a QNX core. I'm sure there's a very good reason for the change of direction. But if the switch has only just happened, Jim Collas' stated hope of having machines out by this Christmas looks like a pipe dream.

The trouble is that there are a lot of factors in this that are out of Amiga's control. They can't do it on their own. Maybe they've been messed around by the IT industry a lot more than we realise. At least these days we're that bit wiser. They can drop as many of their so-called "bombshell" announcements as they like, but there's only one thing that's going to cut the mustard, and it's not a cardboard box with an Amiga badge on it.

Tony Horgan

Continued overleaf ➡

News from Blittersoft

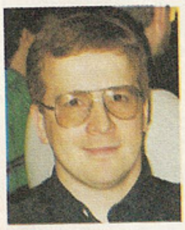
We figured they had a lot to say, what with the BoXeR, the PPC versions of Fusion and PCx and the new G3 boards coming from phase 5. Here's what Paul LeSurf had to say:

PHASE 5 G3 PLANS

They've changed the design of the new boards dramatically in order to cost-reduce them, so the new G3/4 boards from phase 5 will no longer include SCSI and only the CyberStorm G3 will have USB as standard. However, they are planning for optional add-ons at a low price to bring back that functionality for those that want to pay for it, but phase 5 won't even be making the boards unless they have 250 pre-orders for them. If you've dealt with phase 5 before, you'll probably know that their position on add-ons hasn't been too successful - the SCSI module for the CyberStorm Mk I never worked properly, the MPEG module for the CV64 never appeared, was promised for the CV/3D but never appeared for that either and all their boards have always been subject to serious delays. However, Paul LeSurf had this to say, "They've been very positive about the September launch of the new G3 card - it's looking very likely that this is a product they'll be able to deliver". The new cards will be available in a variety of different guises, but certainly not the bewildering array that greeted potential buyers of the first generation of PowerPC accelerators. Blittersoft have given us these figures:

Blizzard G3 300MHz £479.95
Blizzard G3 400MHz £649.95
CyberStorm G3 400MHz £649.95

There's also a graphics card called the CyberVision NG planned for both machines to use the mini-PC slot on the cards (which is also how you'll use the proposed add-ons). It is going to be based on an as yet unnamed 128-bit 3D chipset which promises to give very high performance for its planned price of just £119.95.

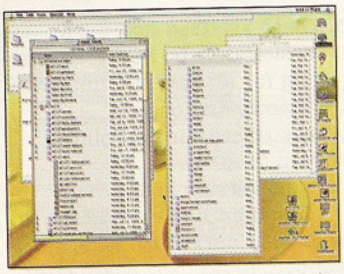


Paul LeSurf poses with WipeOut 2097 and Fusion...

WIPEOUT 2097

"We took delivery of our first beta of this program today, and we hope it won't be long until the final release."





Enough FusionPPC pre-orders came in to make the new version viable.

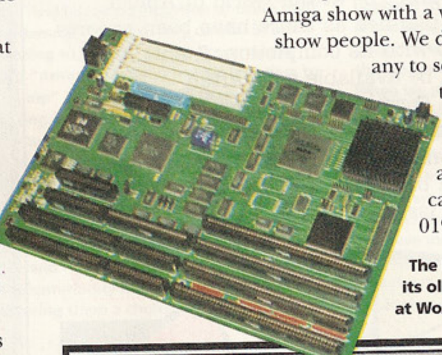
FUSIONPPC/ PCXPPC

"People who pre-ordered from MicroCode Solutions for FusionPPC should be hearing from them very shortly as the lower limit of 500 pre-orders has been exceeded. PCx PPC pre-orders are lagging behind a little, but it looks certain that this software will arrive too."

BOXER

"Mick promises he'll be at the World of Amiga show with a working board to show people. We don't think we'll have any to sell, but we're positive they'll be ready by the end of the year."

For more details on any of these topics, call Blittersoft on 01908 261466.



The BoXeR motherboard in its old guise. The one shown at WoA will be quite different.

SHOW DIARY

AUGUST 21-22: AMIGA DOWNUNDER '99 SHOW in Canberra – Australia Hotel Heritage, 203 Goyder Street, Narrabundah 2604, Canberra, Australia.
http://www2.dynamite.com.au/krash/amigadu/

SEPTEMBER 4: SAKU '99 in Vantaa, Finland. Details to follow.
http://batman.jytol.fi/~saku/

SEPTEMBER 24-26: INTERNATIONAL AMIGA '99 in Toronto, Canada. Details to follow. http://www.randomize.com

NOVEMBER 12-14 HOME ELECTRONICS WORLD '99 in Köln, Germany. Details to follow.

RC5 update

The Amiga RC5 cracking team is going great guns. Within the next couple of weeks (ie. before this issue comes out, but after it goes to press) we are fully expected to get into fifth place ahead of the current team placed fifth – "Japan Linux Users Group" – who have less members than the Amiga team, and while, figuratively, have more horsepower, are less dedicated to the RC5 effort meaning that Amiga owners will steal a march on them. All the teams combined have now just about managed to crack 10% of the total keyspace that might be required to beat this encryption scheme, and that's after nearly three years of effort!

The RC5 challenge continues as before. If you are hooked up to the internet, with whatever machine, although the team's boss Thomas Tavoly does prefer at least one Amiga in there somewhere, then please join up. It costs nothing, it doesn't take up much of your computer's processing power (you'll probably never notice that it's running) and it's easy to use. It's a good way to keep the Amiga's name alive (at least in the encryption business). Go here: http://distributed.amiga.org/

Other news

PIRATES AHOY!

Microsoft have taken a step against their major competitor these days - piracy. The Redmond company have issued civil claims against eight major American companies who stand accused of having "copies-they-haven't-actually-purchased" of several of Microsoft's top titles. While we don't like Microsoft and their ways, we do feel sympathy for any company losing money because cheap businesses don't want to pay their way... The company said that it was going to give over $25m of the proceeds to charidee. Aw, nice.

3DPC?

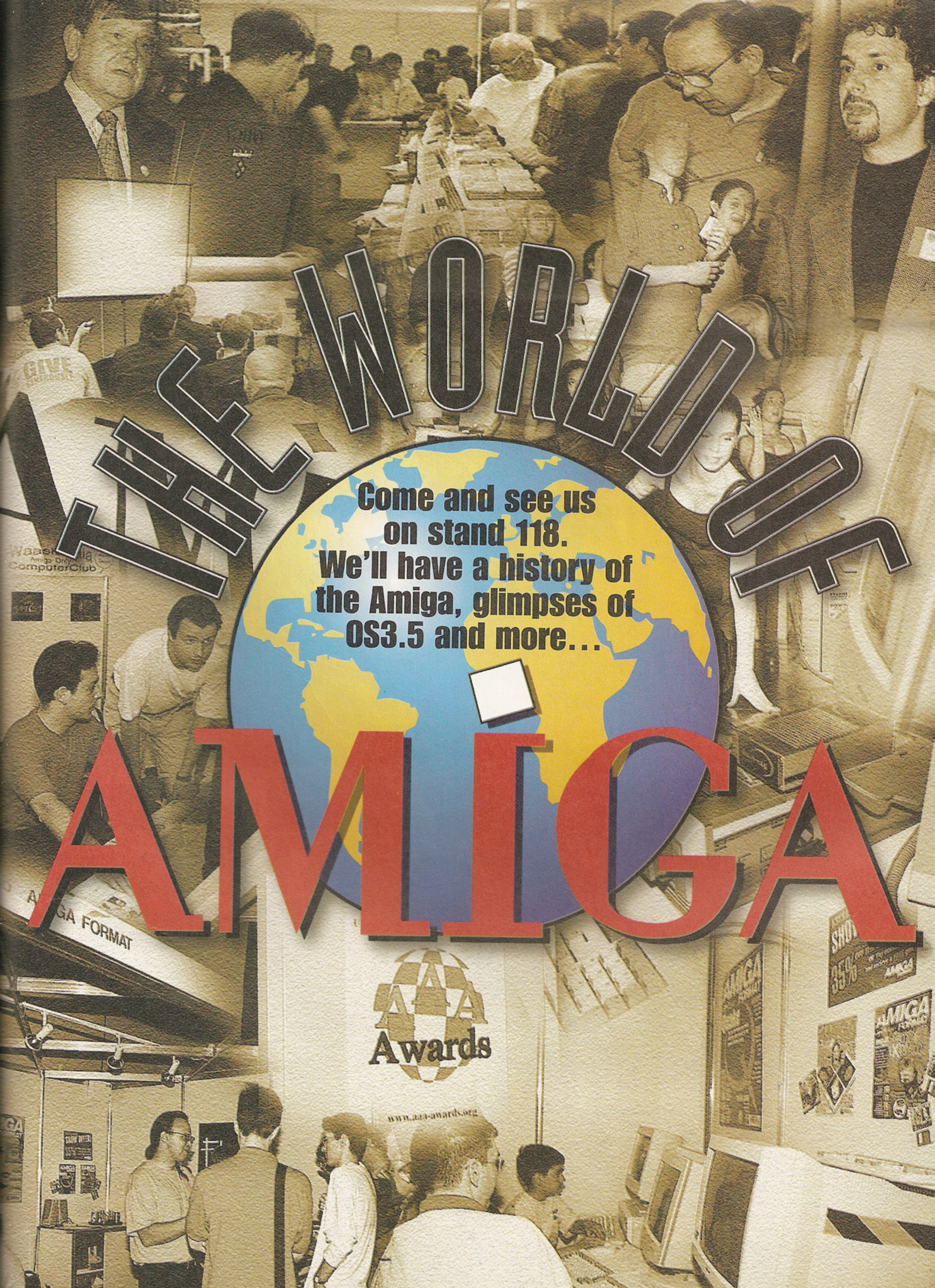
SGI and Intel are to work together on making sure that OpenGL is optimised for current and future Intel processors, including enhancing key components of the OpenGL pipeline. How this will affect the new Amiga's performance in the realm of 3D graphics is unclear, since it obviously gives not only the current Pentium III, but also the forthcoming IA-32 and IA-64 platforms a bit of a leg-up on the new Amiga machine.

GLOBAL CNET

CNET, Inc., have announced the launch of an extensive multi-media advertising campaign to establish CNET as the one place to go for computer and technology information. Budgeted at more than $100 million over the next 18 months, the integrated campaign is one of the largest in the history of Internet brands and marks the first major advertising push for the Internet media company. "Over the past several years, CNET has established itself as a category leader," said Halsey Minor, Chairman and CEO of CNET, recently ranked as one of Business Week's top-performing Information Technology companies. "Now we intend to aggressively grow our marketshare."

GOLDEN APPLE

Apple are going from strength to strength. They recently released their new figures and saw their shares rise to a six-year high of more than $54. Plans for the coming year include new laptops, new iMacs and even a PDA, so Amiga had really better get something of a move on, if they want to capture some of the market that seems to love Apple right now. AF


THE WORLD OF
Come and see us
on stand 118.
We'll have a history of
the Amiga, glimpses of
OS3.5 and more...
AMIGA
Awards
AMIGA FORMAT
ComputerClub

The Art of

After advising many musical Amigans, **Tony Horgan** put his money where his mouth was and released a record himself. Here's what happened…



It's an exciting day when the first white labels turn up... not that you'd think it to look at this picture! For a vinyl junkie like myself, seeing your own tune on a 12" single is rather satisfying.

Technics

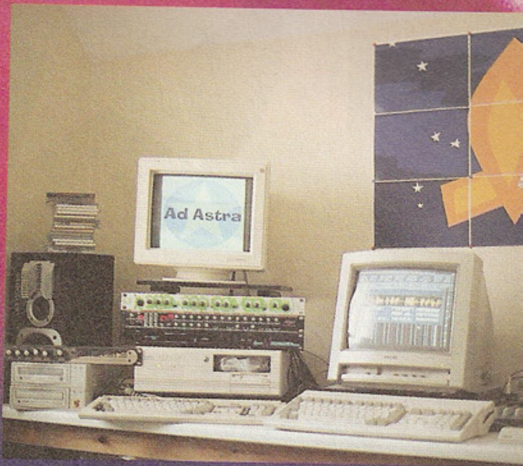
Special thanks to Paul on *X Fade* and to Gavin Roberts for the cover and main image

WHO'S THAT HORGAN?

Tony Horgan is our favourite freelancer. Not only is he polite and well turned out, he bought us all a beer once. He used to edit that CU Amiga magazine, but now concentrates more on his music (as he quaintly calls it), getting married and writing a topical column for our news pages once an issue. He also starts a new music tutorial in this very issue on page 64 and accompanies it on the CD with an example track.

Noise





The A1200 takes centre stage in the Ad Astra studio (aka the spare room), dominated by the AN1x keyboard synth and a pair of loud Jamo speakers. Samples are taken from vinyl via the little GM25 DJ mixer.

Many of your Earth moons ago, a PD library sent me a piece of software called *Game Music Creator* to review. Until then, the only music I'd managed to squeeze out of an Amiga amounted to no more than a few twee ditties played with sounds akin to the noises you might expect from a distressed bee stuck in a tin can. *GMC* was different though, allowing music to be made up of samples strung together on a block of numbers, instead of on a traditional musical stave (which was handy, as I knew absolutely nothing about music notation).

Soon enough I'd sampled the piano riff from Black Box's *Ride on Time* and lashed it up with a few drum samples that came on the disk. The timing was way out and nothing looped properly, but even so, the resulting racket was enough to prompt a passer by to comment, "You could be on *Top of the Pops* with that." My bubble was burst a minute later when I was ordered by the rest of the office to, "Turn that bloody noise down!". This was a phrase which became increasingly familiar over the following years…

The seed was sown, and from that moment on I had a new ambition in life. Fast-forward a couple of years to my first awe-inspiring experiences of raves, and the focus of the ambition became sharper: now it was to make a record that compared to tracks like Hardfloor's *Acperience 1*, Spooky's *Little Bullet* and Underworld's *Rez*; then have it played at a club or rave and watch everyone go mental to my tune. I can't claim to have equalled those classics, but to my immense satisfaction, the second part has just about come true, and here's how I did it.

ASSEMBLING A STUDIO

When you're struggling to afford a £50 Tandy mixer to combine the sounds of your Amiga and a £100 home keyboard, the idea of building up a studio of any worth seems impossible. However, one of the great things about MIDI equipment, mixers and so on is that they're a sound investment to be built upon. Unlike computers, you don't have to keep upgrading or throwing bits out in order to expand. You just buy more stuff as you can afford it.

If something does become redundant in your particular set-up, you can normally sell it for a decent price anyway. Amiga journalists don't get paid very well so it took a while, but over the years I managed to build up the nice little collection you see in the Studio Checklist box.

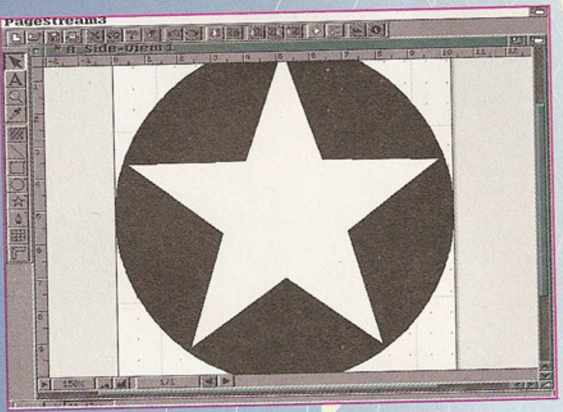
Here's a little tip. When you're looking to buy new studio equipment, don't take too much notice of personal recommendations. That might sound like bad advice, but I've found that most musicians and producers tend to recommend the kit they have with a convincing air of authority, when in fact they've probably never used anything else. For instance, most people will tell you that Akai samplers are much better than any other brand, which is complete rubbish. Do your own thinking, and make sure that anything you buy does exactly what you want it to.

Continued overleaf ➡

Making the labels

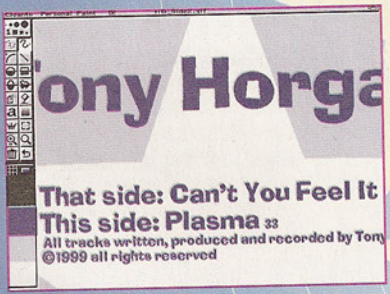
Even though the record was to be packaged in a plain grey sleeve, it still needed a centre label for each side of the vinyl. These were created with a combination of *PageStream 3.2*, *Personal Paint 6.6* and *ImageFX 3.0*.

STEP 1:
***PageStream*'s circle tool was used to generate two templates of the correct size. The star logo was then placed in the middle, courtesy of the Star tool.**



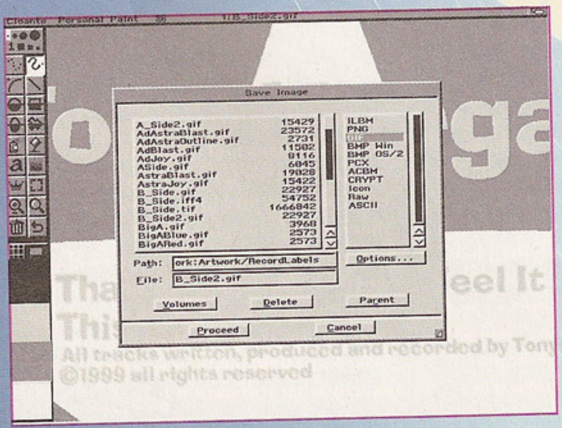
STEP 2:
The template was coloured from within *ImageFX*. The entire images were too big to be worked upon at once in *PPaint* so the large type was added with *ImageFX*.





STEP 3:
***PPaint* was then used to add the smaller type, and also to trace around and smooth off the pixellated edges of the large, expanded font that was used for the big type.**

STEP 4:
Both images were converted to greyscale to avoid confusion at the printers, then saved out as GIFs to be emailed. A Pantone colour reference and a colour "match print" were supplied to indicate the required shades of blue.



MAKING THE TRACK

When *CU Amiga* closed, I saw it as an opportunity to finally devote some time to making music. Squeezing in the occasional evening session or sneaking off to the spare room on a Sunday afternoon just wasn't working. By the time I came back to a track I'd previously started, I had a whole load of new ideas I wanted to try out, resulting in a hard disk full of sketchy two minute songs but nothing anywhere near a complete track.

The other problem that had previously dogged me was also time related. I'd spend so much time building up the beats using samples, doing my best to leave a couple of sample channels free for other sounds, it was hard to keep the momentum going that's essential to see an idea through to completion. The solution was to treat myself to a drum machine (a Novation DrumStation) and a keyboard synth (a Yamaha AN1x) which allowed much quicker try-outs of chords and melodies. Both have turned out to be excellent buys, making for far quicker transitions from ideas to recorded music.

OctaMED SoundStudio is still my sequencer of choice, which I use in straight four-channel Paula and MIDI mode. Putting *SoundStudio* into multi-channel mixing mode slows things down and then the timing of the samples and MIDI can drift. Besides, the mixing noise you get with a 16-bit soundcard on a low-spec Amiga makes the whole mixing process a waste of time. *OctaMED*'s sample-handling features are far too powerful and immediate to discard in favour of an expensive MIDI sampler, and the classic non-mixed 8-bit sound isn't much of a problem when you've had so many years to get to know it.

BANGING IT OUT

Onto the track itself then. The core of it came about pretty quickly, stemming from a few prods of the AN1x keyboard which produced some nice rhythmic chords. Next, the TR-909 bass drum (from the DrumStation) was used to rivet a backbone into the track, and from there the rest of the drums were built up. An old favourite breakbeat was drafted in and a simple bassline added to complete the throb. All of this was done over a simple song sequence of four blocks, each four bars in length.

A quick rifle through some old records revealed the vocal which was sampled directly into *OctaMED*, then cut into small pieces to allow me to keep it in time and in tune with the rest of the track. Another copy of the vocal sample was processed with *SoundProbe*'s timestretch feature, giving it that long and lazy sustained quality for use in the breakdown. From there, the four source blocks were copied, amended, cut, pasted, jiggered around with and finally rolled out into a six-and-a-half minute track.

OctaMED's track-muting features come in handy at this stage for trying out different combinations of tracks (hold Shift or Alt and click on the track number to solo it or turn all the other tracks back on). To keep things sounding neat and DJ-friendly, I kept a check on the song position numbers to ensure that the sections flowed in 8/16/32 bar builds and drops. It's not the funkiest way of working, but then I never was a big fan of 3/7 time in dance records. At 3am on Saturday night when you're in the middle of a club, three sheets to the wind, a plain old 4/4 time signature is just the ticket.

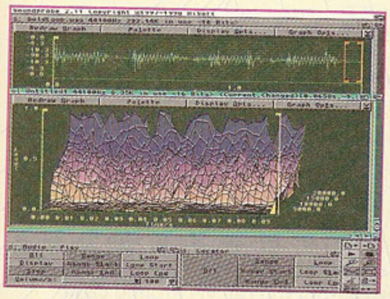
I managed to record a rough mix from the first session on a portable MiniDisc unit. This allowed me to replay the mix through a number of different hi-fi systems to check for any major problems with the sound. It sounded fine apart from being a bit too bassy, so a couple of sessions and remixes later, I ended up with an almost final mix. I was confident about the track but needed a second opinion – preferably a professional one.

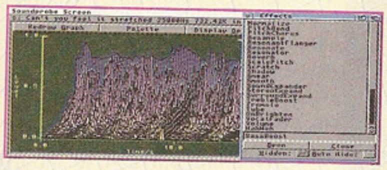
THE SECOND OPINION

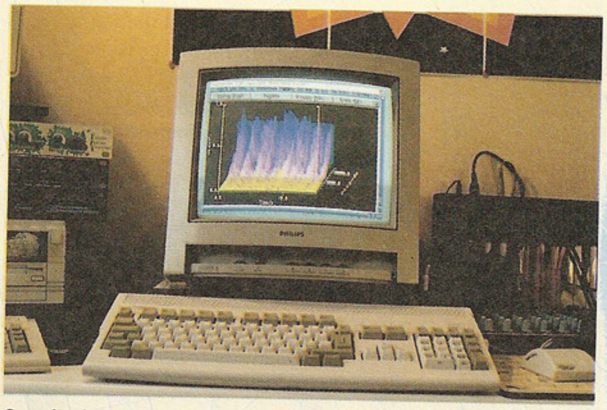
So there I was, clutching a MiniDisc containing what I thought was a track that could go places. I needed some confirmation before getting too excited about it, but this time, instead of playing it to different friends whose reactions I could predict quite accurately (one says it should be harder, another doesn't like vocals, someone else wants the breakdown and build up to go on much longer...), I decided to put it on a tape and take it down to Creative Sound, a specialist dance record shop in Kingston.

Walking up to the counter, half expecting to be laughed out of the shop, I handed over a tape, and Mick, the hard house stock buyer, slipped it into the sound system. Two punters at the listening posts removed their headphones and both asked Mick for a copy of that record he'd just put on. My head swelled like a time-lapse film of a prize-winning pumpkin.

I played it cool and waited for the track to end before inviting a final verdict. "Yeah mate, you've got a tune there," said Mick, "Go and get it pressed up." I was excited, but didn't have a clue what to do next. Mick gave me a number to phone and said, "They'll sort it out." I got a condensed account of what "sorting it out" entailed, which turned out to be lots of fiddly little stages between making the track and it appearing in record shops. It sounded like a minefield for someone who's never done any of it before, so I decided that getting someone else to sort it all out was indeed the best option.







SoundProbe wasn't used a great deal, but it's got so many effects on hand that it tends to play at least a small part in just about all of my tracks. This time it handled the timestretching of the vocal.

DOWN TO BUSINESS

Fluid Distribution are the company I chose to lead me through the process of releasing the record. The stages involved included mastering, processing, vinyl pressing, production of artwork for labels, label printing, mail-outs of promotional and pre-sales copies and, finally, production and distribution of the final records, complete with proper labels and sleeves. Getting all of this done requires the services of a number of companies, so my having to deal solely with Fluid simplified things a great deal.

> "It was all done on the fly with a remarkably primitive looking but nonetheless impressive bank of large, coloured knobs…"

MASTERING

The first and most critical stage of the vinyl production process is mastering. Even though I had what I considered to be a master recording (recorded on the A4000 via a Toccata soundcard and burnt to CD with *MasterISO*), I still needed a master from which the records themselves would be made. I was booked in for a 45 minute session at CTS Studios, a large professional studio complex in the shadow of the Twin Towers of Wembley Stadium. I'd been told that I'd be able to make some final adjustments to the overall EQ (frequency balance) of the track but that I shouldn't expect any miracles to be worked.

When I arrived at CTS I was greeted by Martin Giles, who turned out to be a very experienced sound engineer. I had expected the A and B side tracks to be recorded to a computer for analysis of their frequencies, and thought they would be digitally EQed accordingly with the use of fancy FFT graphs and so on. However, despite the presence of a Mac which was fully tooled up with professional audio software, it was all done on the fly with a remarkably primitive looking but nonetheless impressive bank of large coloured knobs and a couple of level meters.

The control panel, resembling the bridge from a 1950s B-movie spaceship, allowed the engineer to make changes to the balance of different frequencies and then compare the EQed version to the original. Some compression and limiting of the volume was also used to reduce the peaks slightly, thus making it sound louder overall, without actually increasing the volume. It was quite a spectacle watching the engineer at work, clearly in his element, hands buzzing across the controls as frequency bands are cut in and out, darting from one part of the room to another to get

In it for the money?

The dance music business is populated by a minority of people who make buckets of cash and a majority who don't. First-time record producers generally fall into the latter category. Leaving aside how much your studio equipment or studio hire will set you back, these are typical costs for each of the stages involved in the production of the first 500 singles:

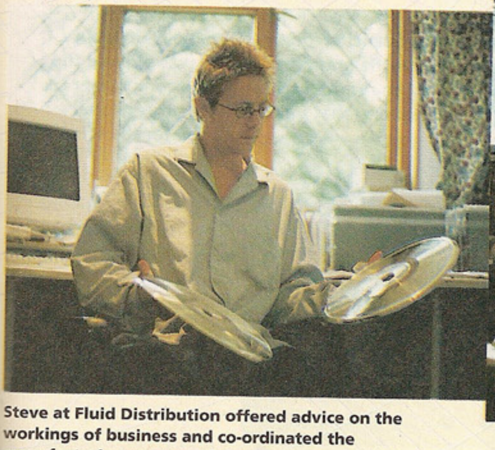
Mastering	£160
Processing	£135
Labels	£88
75 test pressings	£72
500 pressings	£250
500 sleeves	£75
Sub total:	£780
Plus VAT@17.5%	£136.50
Total:	**£916.50**

If you were to sell all of that first batch of 500 to a distributor at a typical price of £2.20 each, it would earn you £1,100. Deduct the above costs and that leaves you with a big fat profit of £183.50.

However, should you then get additional orders for the same record, you would stand to make about £650 on each additional run of 500 copies since the initial mastering and test pressing costs don't need to be incurred again. A sale of 1,000 records would be considered acceptable, while anything over 4,000 would be exceptional, and would probably involve some kind of licensing deal with a bigger record label. Based on these costs, if less than 400 copies are sold, the venture will lose money.

It's not all doom and gloom though. If the track is good enough and gets into the right hands, there's always the chance that it might "blow up", as they say, and find its way into the sets of the big name DJs, get licensed and heavily promoted by a big label, go into the pop charts and then earn further licensing rights from inclusion on CD compilations. A spate of get-rich-quick remix work might then follow as other labels try to get a slice of your sound. Or maybe not, of course…

Continued overleaf ➡



Steve at Fluid Distribution offered advice on the workings of business and co-ordinated the manufacturing process of the whole record, including the production of the metal masters.



Can you spot the most important and technically advanced piece of equipment in this studio? It's the ears of Martin Giles, the Mastering Engineer at CTS studios.



Studio Checklist

Below is a list of all the equipment used to make *Can't You Feel It* and the B-side track *Plasma*. It's a collection of gear that's been gradually built up over the best part of a decade. The THC filter was only used on the B-side, but everything else was used for the main track at some stage. The A1200 was the control centre, playing samples and sequencing the MIDI devices, while the A4000 was mainly used as a hard disk recorder to master the final mix.

I had intended to record via *Samplitude* and a Toccata soundcard to a Jaz drive over the Zorro GVP SCSI card, but the Jaz drive couldn't handle the flow of data required to keep up with the audio (which is strange, as the CD writer worked fine on the same interface). With not enough room to use *Samplitude* on my main hard disk (*Samplitude* needs twice the space of your audio file in which to work), I ended up mastering to the main IDE hard disk using the basic *Toccata Record* tool. The resulting file was then used along with the previously recorded B-side to burn the CD master.

- **Cheetah MS6 analogue mono synthesiser module**
- **Novation BassStation keyboard**
- **Yamaha AN1x 'virtual analogue' synthesiser keyboard**
- **Novation DrumStation**
- **THC-00 Resinator analogue filter**
- **Alesis NanoCompressor**
- **Yamaha FX500 effects processor**
- **Zoom 1201 effects processor**
- **Technics hi fi turntable with slight vari-speed control**
- **Made 2 Fade GM25 DJ mixer**
- **Spirit Folio Lite mixer**
- **Aiwa AM-F5 portable MiniDisc recorder**
- **Technics SU-Z25 hi-fi amp**
- **Jamo D115 speakers**
- **Sennheiser headphones**
- **Amiga 1200, 50MHz '030, 18MB RAM, 80MB hard disk, Squirrel SCSI, CD-ROM**
- **Amiga 4000, 50MHz '040, 10MB RAM, 1GB hard disk, Philips CDD 2600 CD-R, Toccata sound card, GVP SCSI interface**
- **OctaMED SoundStudio**
- **Samplitude Opus**
- **Toccata Recorder**
- **MasterISO**

I'd like to thank my Yamaha AN1x keyboard, without which none of this would have been possible. It's got some lovely sounds for making techno and trance. If only it could play them all at once...

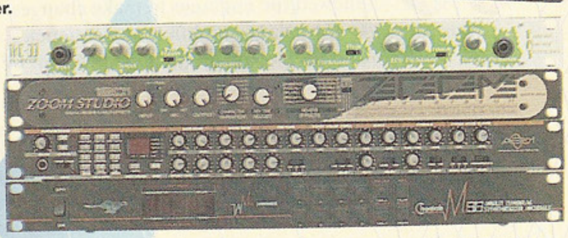


I don't actually use the BassStation for basslines very often, but it does a nice line in little bleepy noises that cut through a crowded mix, good for adding little details and extra melodies.



You can buy one of these brand new for about £80. It's an Alesis NanoCompressor, used to reduce the 'contrast' between the loud and quiet parts of your music. It's particularly good for making the bass sound tighter.





From the top we have the THC-00 Resinator (I think there's supposed to be a drug joke in there somewhere), the versatile Zoom 1201 effects unit, Novation's fabulous DrumStation (makes authentic TR-808 and 909 sounds with multiple audio outputs) and the long-since discontinued Cheetah MS6 analogue monosynth.

an accurate impression of the sound from the four enormous speakers.

After a while we agreed on a slightly brightened, limited and bass rolled-off set-up that seemed to improve slightly on the original, so it was straight on with the cutting itself. This brought into play the big lathe in the corner, which has a kind of industrial record player on one end, with the other end connected up to the audio control panel. It works on the same theory as a conventional record player, only in reverse – instead of the stylus being vibrated by the grooves of the record, the signal comes from the other end and makes the tone arm wobble around and cut a groove into a rotating sheet of soft lacquer.

There was one last decision to be made before going ahead with the cut, concerning the record/playback speed. At 45rpm you can get around eight minutes of high fidelity music on a 12" single; longer if you switch to 33rpm. There's a slight degradation in sound quality if you use 33rpm, so 45 is best if possible. I decided on 45rpm for the A-side and 33rpm for the longer B-side track. With that sorted, both tracks were cut onto two separate lacquers and sent off to EMI for the processing stage, at which point they would be made into metal stampers, a pair of 'moulds' from which the actual records themselves are then produced.

WHITE LABELS

About a week later the first vinyl copies turned up. These are known as test pressing white labels – logical enough, seeing as they just have blank white labels stuck on them. The point of these white labels is threefold. The first is to check that the original mastering process worked, attaining acceptable sound quality with no glitches.

Next, the white labels are used as



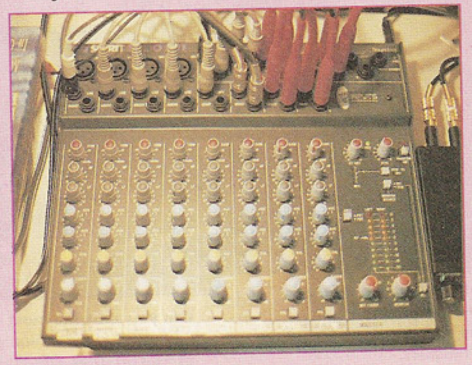
This was another cheap and cheerful buy, secondhand from a shop on London's Denmark Street (like a Tottenham Court Road for studio gear). It's a bit noisy but has a pretty nice reverb.

THE MIX

Everything in my studio goes through the Spirit Folio Lite mixer. I bought it brand new for about £130 when it was discontinued and priced down for a quick sale. While that was incredibly good value for money, it's a pretty basic mixer, and not one that I've ever heard recommended for professional use. Its four mono and four stereo channels each offer bass and treble EQ, along with two effects sends, plus the usual panning, gain and volume controls. I used every channel on the mixer and both effects loops.

One of the trickiest parts of making a record is getting the balance of all the sounds just right. Once you've got the volume levels set, the next thing is to tweak the EQ, but when you can only cut or boost each channel in one of two frequency bands, there's very little that can be done to give each sound its own space. My next addition to the studio will probably be a bigger mixer which has sweepable mid-range EQ on each channel.

Overall I was happy with the mix, considering the equipment I was working with, but there's a bit of a harsh aspect to the higher frequencies due to a combination of a cheap old reverb unit (the Yamaha FX500), the Amiga's 8-bit samples (and general noise from the Amiga) and the single set frequency of the mixer's EQ. I had initially used a graphic equaliser to attempt to filter out the high frequencies coming from the FX500, but I had to abandon that idea because the graphic equaliser was old and the left channel kept dropping out. The recent addition of the compressor to the system was a big help in attaining that indescribable professional edge for the whole production.



I'm starting to outgrow my little Spirit Folio Lite mixer, but it was just about up to the job. If the record makes any money, I'll probably buy a new main mixer and keep this as a submixer, probably reserved solely for the beats.

promotion aids (white labels are also known as promos). They're sent to DJs in order to try to get a 'buzz' going on the track by having it played in the right clubs and preferably on the radio too. I targeted, among others, a few big name DJs (Judge Jules, Graham Gold, Pete Wardman and Pete Tong), selected because they all have popular radio shows and play music in a similar style to *Can't You Feel It.* Even though the chances aren't that great that they'll play it, since they receive loads of free records every week, if one of them did it would be a big help. As far as I'm aware, so far none has played it on the radio. Copies were also sent to the music press for inclusion in their review pages, but none has seen fit to include it yet.

I also took a couple of copies to give to the DJs at Strawberry Sundae, a big club night in London. Both DJs I gave a copy to there said exactly the same thing: "Thanks, I'll listen to it, and if I like it I'll play it." I stayed until about 4:30am but neither played it that night. Unfortunately, due to being skint, I've been unable to return on subsequent weekends to check whether they've played it there since.

> "I hope and half expect to sell more than 500 in total, but it's always best to underestimate rather than overestimate…"

The third job of the white labels is to get pre-sales orders from distributors. Initially, a bunch of white labels were sent to a number of distributors for this purpose. However, I was then advised by the people at Creative Sound to try to get an exclusive distribution deal with just one distributor, and was pointed in the direction of two who specialised in hard house and trance.

After putting the whole thing on ice for three weeks while I got married and went off on my honeymoon (thanks to the well-wishers, by the way!), I returned to try to sort out the distribution. Eventually, a distributor called Essential agreed to take an initial order of 500 copies on a sale or return basis.

That was quite a breakthrough as it meant I could finally get my record on sale to the public. So an order for 500 pressings, complete with one-colour labels and sleeves, was put in with the duplicators. I hope and half expect to sell more than 500 in total, but it's always best to underestimate rather than overestimate the demand. The last thing I want is to end up with 1,000 unsold copies, with my finances £500 in the red.



Take one lathe, put a record stylus on one end, then attach an industrial record player. Plug it into a CD player, flick the power into reverse and bingo: one vinyl mastering machine. That's the theory, anyway.

END OF THE LINE?

And that's where we're up to now. The record is just about to be sold into record shops around the country by Essential. I still haven't heard it in my favourite club and it hasn't had any press coverage, but it's early days yet. The *Top of the Pops* appearance could be just a few weeks away.

That's where you come in. Go out and buy it, and make me a very happy man! Whether it goes ballistic or sinks without trace, at least I now know what's involved, and instead of just dreaming about what could be, I've actually gone and done it, which means a lot to me anyway. Next time, and there will be a next time, I'll be that much more the wiser for the whole experience. I'll let you know how *Can't You Feel It* fared in a forthcoming issue of *AF.*



Every town should have an independent dance record shop like Kingston's Creative Sound. Without these, productions runs of a 1,000 records just wouldn't be possible.

What went wrong?

All that Jaz: My Jaz drive turned in such a poor performance that it couldn't keep up with the hard disk recording software, so I had to ditch *Samplitude Opus* and use *Toccata Record* to squeeze the A-side onto the space left on my main IDE hard disk.

Turn up the bass: I realised after having the records pressed up that the reason my original CD master was too bassy was that the bass EQ was unnecessarily cranked up on the mixer's bass drum channel.

Wasted white labels: The best part of about 60 test pressings was completely wasted in the initial attempt to get distribution sorted out, when it took just one copy sent to the right company to get the desired result.

No news is not good news: I assumed that jobs and production processes were going ahead as promised, to find out at later dates that there had been unreported problems weeks before, leading to countless unnecessary delays.

CONTACTS

Fluid Distribution (vinyl manufacturing services) Tel: 01784 481886
Email: vinyl@fluid-dist.demon.co.uk
Web: www.fluid-dist.demon.co.uk

CTS Studios (vinyl mastering)
Tel: 0208 903 4611
Email: info@cts-lansdowne.co.uk
Web: www.cts-lansdowne.co.uk

Turnkey (studio equipment retail)
Tel: 0207 419 999
Email: sales@turnkey.demon.co.uk
Web: www.turnkey.uk.com

Essential (distribution)
Tel: 0207 375 2332

Amato (distribution)
Tel: 0208 964 3302

Further Reading

If this has inspired you to try putting your own Amiga to musical use, check out some of *AF*'s sister titles, dedicated to helping you get the most out of your computer, with advice, tutorials and free software.



EYELINE

Bringing you the latest Amiga News from Eyetech
http://welcome.to/amiga.world

Latest News in Brief

WORLD OF AMIGA 99 - LATEST

FREE ENTRY TO THE WORLD OF AMIGA!

If you spend £250 or more with Eyetech at the World of Amiga we will pay for your admission to the show! Simply hand your admission ticket to us when making your purchases and we will refund you the cost of your admission.

Your favourite products will be there!

Thanks to all of you who have given us feedback on what you would like us to take to the show. The nine most requested items were : Accelerators - PowerPC and Apollo, CDWriters and ReWriters, Dimage-V Digital Camera Bundles, EZLink infra-red control system, EZTowers and EZPC tower systems, EZVGA Scandoubler/Flickerfixers' EZGen genlocks, Fujtsu portable printers Scala MM400, Scanner Bundles.

We will be taking all these items to the show and offering them at very special prices - so make a beeline for the Eyetech stand as soon as you arrive to secure your bargain. We look forward to serving you!

Can't make the WoA show?

We'll be sorry not to see you - but as a consolation we will give you 50% off our normal carriage prices for goods ordered between the publication date of this issue of Amiga Format and 31st July 1999. To get this concession you must quote 'NOWOA' when placing your order by phone, email, fax or post.

AMIGA FORMAT 10TH BIRTHDAY PRESENT

Free 240W PMPO Amplified Speakers



For all orders placed up to 31st July 1999 for EITHER a monitor/scandoubler/flickerfixer package - OR - a Prelude sound card - we will include a pair of superb quality 240W PMPO mains-powered amplified speakers absolutely free of charge (normally £24.95). The audio output to these speakers is via a 3.5mm jack for direct connection to the Prelude sound card, CDROM audio jack or EZ Tower audio adapter. Due to the weight of these speakers there will be a small additional carriage charge if supplied with the Prelude sound card.

SPECIFICATIONS IMPROVED ON EZPC TOWER SYSTEMS

We are constantly striving to provide ever better functionality and value-for-money in all our products and none more so than our very popular EZPC-Tower expansion systems for the A1200. All EZPC Tower systems have now been uprated to include:

- EZVGA internal scandoubler
- SMON video switcher and KMON keyboard switcher (for using the PC keyboard and monitor directly with your A1200 as an alternative to the Siamese RTG system)
- Unlimited internet access now included free of charge in all packages which have a modem included
- Hard drive upgrade option from 4.3GB to 17GB now just £99.95
- Faster PC processors on all models - please ring for details

And the best news of all - these increased specifications have been incorporated at no additional cost - making the EZPC route easily the most cost effective way of adding sophisticated expansion facilities to your A1200.

STOP PRESS: ImageFx v4 now available from Eyetech. See Kermit Woodall demo it on our stand at the WOA show.

EZLINK - Home Automation from your Amiga

The ultimate interface for your A1200

Control your Amiga using a TV etc remote control!

Control your infrared-enabled appliances from your Amiga!

EZLink is a unique interface for any WB2.04+ Amiga. Plugging into the joystick port via a short cable, the EZLink box translates infrared remote control signals into AREXX commands for controlling your Amiga - or optionally into signals that emulate an Amiga mouse or joystick. You can also use programs running on your Amiga to control other infrared-enabled appliances - such as TVs, video recorders, light dimmers etc.

The price for this remarkable interface - just £29.95. Suitable remote control handsets are also available for just £9.95.

MK2 PortJunior & PortPlus now available

The popular PortJunior (1 x serial port) and PortPlus (2 x Serial & 1 x Parallel), high-speed Serial/Parallel interfaces for the A1200 introduced by Eyetech around 18 months ago have been updated. In particular, the Mk2 versions solve compatability problems experienced on some A1200 motherboards with 'noisy' clock port signals - which could cause some Amigas to 'hang' on internet (but not bulletin board) access. In addition, the driver software has been completely revised, and now includes a utility program to allow a PC serial mouse or trackball to be used with the A1200.

PortJunior Mk 2 - just £39.95 **PortPlus Mk 2 - just £69.95**

FIVE NEW PRE-CONFIGURED MK4 EZ-TOWER MAGIC PACK SYSTEMS

Although the basic Amiga International desktop console Magic Pack still represents excellent value for money (see the box-out below) more and more customers have been asking us for new Amiga 1200s which are already EZTowered up. So here they are, five pre-configured systems to suit different applicants and budgets. All systems come with brand new KS 3.1/WB 3.1 disk and manuals, mouse, 2mb graphics memory and a fantastic productivity software bundle including Wordworth 4SE, Turbocalc 3.5, Datastore 1.1, Photogenics 1.2SE, Personal Paint 6.4, Organiser 1.1, & Pinball Mania & Whizz games. Hard drive versions also come with Scala MM300 preinstalled.

A1200T-LE (A1200 T - Light Edition)
This is the best choice for existing A1200 users who want to upgrade to a new Workbench 3.1 machine and add their existing hard drives and other peripherals and accessories themselves.

A1200T-PS4 (A1200 ProSystem-4)
The A1200 Professional System 4 comes complete and ready-to-run with 3.2GB hardware, 24-speed CDROM, EZCD-XL buffered interface, '030/40 accelerator with MMU, FPU, 8mb and a CDDA/Amiga audio mixer output. Other options available - see table on the right.

A1200T-PS4/XL (A1200T ProSystem-4 XL
This system is configured as for the A1200T-PS4 but with a faster CDROM and an 040/28MHz accelerator with FPU, MMU, 16mb memory and a pair of mains-powered 240w PMPO stereo speakers.

A1200T-SE (A1200 T - Studio Edition)
This is the system for serious Amiga-based multimedia work. It is configured as the A1200T/PS/4XLS but comes with an LS120 drive (reads & writes 1.44 PC diskettes & 120MB Amiga/PC cartridges), an EZVGA scandoubler/flickerfixer and a 15" SVGA digital monitor.

A1200T-SE/XL (A1200T - Studio Edition XL)
This is the ultimate A1200 multimedia tower system. It is configured as the A1200-SE system above and uprated to include a CDReWriter with MakeCD software and 10 blank CD-recordable disks, a 4.3GB hard drive, an 060/66 accelerator with 32mb memory, a 17" digital SVGA monitor, a Prelude 1200TW full duplex hi-fi sound card and software and a 600 watt PMPO amplified sound system with stereo speakers and subwoofer.

System Components A1200T -	LE	PS4	PS4/XL	SE	SE/XL
Mk4 EZTower	Yes	Yes	Yes	Yes	Yes
PC keyboard & keyboard adapter	Yes	Yes	Yes	Yes	Yes
Upgrade to A4000 k/b and k/b adapter	+£20	+£20	+£20	+£20	+£20
A1200 motherboard with K/S 3.1/WB3.1	Yes	Yes	Yes	Yes	Yes
Sony floppy drive & EZDF0 interface	Yes	Yes	Yes	Yes	Yes
Magic Pack productivity software + 2 games	Yes	Yes	Yes	Yes	Yes
Upgradeable to full EZPC Tower system	Yes	Yes	Yes	Yes	Yes
Scala MM300 multimedia software	n/a	Yes	Yes	Yes	Yes
EZCD-XL 4-device buffered interface	n/a	Yes	Yes	Yes	Yes
EZTower CD audio/Amiga audio mixer	n/a	Yes	Yes	Yes	Yes
3.2GB Tower drive with WB3.1 installed	n/a	Yes	Yes	Yes	n/a
4.2GB Tower drive with WB3.1 installed	n/a	+£20	+£20	+£20	Yes
LS120 with 1 cartridge & EZIDE s/w	n/a	+£80	+£80	Yes	n/a
CDRom / CDReWriter + 10 gold disks	n/a	24x	32x	32x	CDRW+GD
1230/40 MMU FPU accelerator - 8 MIPS	n/a	Yes	n/a	n/a	n/a
1240/28 MMU FPU accelerator - 21 MIPS	n/a	+£60	Yes	Yes	n/a
1240/40SE MMU FPU accelerator - 30 MIPS	n/a	+£100	+£40	+£40	n/a
1260/66 MMU FPU accelerator - 51 MIPS	n/a	+£250	+£185	+£185	Yes
Memory included (ring for upgrade prices)	n/a	8MB	16MB	16MB	32MB
EZVGA scandoubler with flickerfixer	n/a	+£80	+£80	Yes	Yes
15" SVGA monitor	n/a	+£110	+£110	Yes	n/a
17" SVGA monitor	n/a	+£190	+£190	+£75	Yes
Prelude1200TW hifi full duplex sound card	n/a	+£140	+£140	+£140	Yes
Amplifier (PMPO watts), speakers (+ subwoofer)	n/a	n/a	240W	240W	600W+SW
Cost with options as specified:	£299.95	£549.95	£669.95	£999.95	£1799.95

If you don't have the need or the space for an A1200 Tower System then we can still supply brand new A1200 desktop console Magic Packs - either floppy drive only, or upgraded to a 170mb hard drive, EZCD-XL buffered interface and external CDROM socket with CDROM i/f.

A1200 diskette desktop console Magic Pack - £179.95
A1200 170MB HD desktop console Magic Pack - £248.95

PORTABLE PRINTERS FROM FUJITSU FROM JUST £49.95



Left pic shows Fujitsu ready for use, right pic shows the printer flat packed with PSU and battery pack

We have managed to obtain limited stocks of portable printers by Fujitsu. The size is just 30x 21 x 2.5cm (11.7" x 8.3" x 1") when packed in its transport wallet and 30x10.5x5cm (WxHxD) when in use.

The printer uses a near-silent thermal printhead, which can either use a thermal ribbon for printing in high quality onto plain paper, or, for economical draft printing, it will print directly on to low cost thermal fax paper.

It comes complete with a thermal print ribbon, a 100-240v PSU adapter (standard IEC 'kettle lead' required), manual and built-in Epson Q and Proprinter 24xe emulators (which are supported by Workbench and Turboprint printer drivers). In addition the printer can be operated from an optional (Camcorder-type) Ni-Cd rechargeable battery pack. These are very well engineered units and come with a 12 month return-to-base warranty (excluding printhead and consumables). Our price is just **£49.95** whilst stocks last. Other accessories are available as follows:

Thermal ribbon cartridges	**£4.95**
6v, 1200mA rechargeable battery pack	**£14.95**
Thermal fax paper per 100ft roll, 8.5"wide	**£4.95**
IEC AC mains 'kettle lead'	**£2.50**
All-pins-connected printer cable	**£9.95**

New Specification phase 5 PPC G3/G4 accelerators for the A1200 available this Autumn - official!

As we go to press, phase 5 have finally got off the fence and announced that they will definitely be manufacturing top end G3/G4 power PC boards for the A1200. And the specifications are awesome:

- socketted processor allowing future user-installable upgrades
- up to 1GB main memory via 2 x 100 MHz SDRam (144pin DIMM) sockets
- 2 mini PCI connectors for SCSI, I/0 or expansion or CybervisionNG graphics card (see below)
- 3rd mini PCI slot for additional cards or high speed active bus expansion
- 2 independent 12mbit USB channels with external connections
- 2mb upgradable firm ware via flash ROM
- full OS 3.5-compliant 680x0 emulator software to run your existing
- Amiga applications and software at amazing speed
- Choice of 300MHz or 400MHz PPC750 cpu with 1mb backside cache

The associated Cybervision NG card builds on the success of the high performance Bvision/Cybervision cards to offer:

- 32mb display and texture memory
- blindingly fast 2D/3D graphics chip with 128 bit 3D graphics engine
- supports resolutions up to 1920x1200 in 32 bit colour (4.3 giga-colours) at 72Hz refresh rate
- built-in video hardware accelerator which supports full screen, full-frame DVD video playback

We have already pre-ordered the full range of these exciting new products and will receive the first shipments to arrive in the UK. phase5 have given a target availability date of late September 1999, but more realistically - based on past experience with manufacturers time estimates - we would expect to be shipping in volume during October 1999.

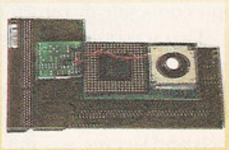
Pricing has not yet been finalised, but we anticipate the G3/300 to be lower in price than the current top-of-the-range Blizzard PPC/240/60/50, with the G3/400 costing around 30% more. The Cybervision NG is expected to be around the same price as the current 8MB BVision graphics cards.

LIMITED EDITION 1260/75LC 60 MIPS ACCELERATOR

Exclusively available from Eyetech - at a price lower than that of the 1260/66!

The fastest 680x0 accelerator for any Amiga is now available (exclusively) from Eyetech. Rated by Sysinfo at around 60 MIPS the accelerator is suitable for both desktop and towered A1200s. The integer processing speed of the 75MHz 060 is - in Simon Goodwin's words - 'awesome', being up to 2200% faster than that of an an 030/50! A.I. recommend an '060 processor to get the most out of OS 3.5 - see separate news story below.

The 1260/75 LC comes with a full MMU but no FPU as no internal or external Motorola FPU module will work at these speeds . As most Amiga software is supplied with non-MMU versions, these should still easily out-perform the FPU versions on a lesser processor in all but a handful of cases. And now for the best news of all. You can have the fastest O/S-compliant Amiga on the planet for just £299.95!



OS 3.5 UPGRADE

OS 3.5 is on track for delivery in a few months time, so now is the time to start preparing your A1200 to be OS 3.5-ready. We will be shipping OS 3.5 (estimated price £34.95) from the date of its official release. Why not place an advanced order to ensure you get your copy at the earliest opportunity? Amiga Inc recommend the following configurations:

For 'acceptable' performance:

'030 accelerator	ACC-030-40-1S	£59.95
Scandoubler/Flickerfixer	EZVGA range	from £48.95
Modem	MOD-56K 56K	£69.95

You will also need:

3.1 ROMs	SYS-KS31-ROM	£29.95
. . . or SYS-KS31-MPUG (w/3.1 disks and MP s/w)		£49.95

To take full advantage of OS 3.5:

'060 Accelerator	ACC-060-50	£267.95
16-bit sound card	ADPT-AUD-PL12-DT	£129.95
I/O Accelerator	INT-SER-PTJR	£39.95

The ideal way to update your Commodore A1200



MAGIC UPGRADE PACK

3.1 Kickstart ROMs, Photogenics 1.2SE, 3.1 Workbench (6 disks), Personal Paint 6.4, Wordworth 4.1SE, Organiser 1.1, Turbocalc 3.5, Pinball Mania & Whizz, Datastore 1.1Workbench 3.1 manuals, Magic Pack Application s/w manuals . .all for just **£49.95!!**

A1200 EZTower systems, EZPC Tower systems, Magic Packs and accessories

EZPC-PRO & NEW ENTRY-LEVEL EXPANSION SYSTEMS FOR YOUR A1200

3 pre-configured EZPC-Pro systems to suit different applications and pockets

The EZPC system works by making the PC motherboard act as a slave processor to your A1200 - looking after the operation of the systems accessories whilst you and your Amiga get on with creative work. (You can of course use the PC as a computer in its own right if you really insist!)

It's also important to understand that EZPC A1200 expansion system is based on a real Amiga and is not at all comparable with other PC-only systems running a clever, but slow, Amiga emulator as a PC application.

In fact there are such a range of applications that the EZPC system can open up to an Amiga user that we have introduced three systems pre-configured for different types of use. These are:

A1200 EZ-PC TOWER-HSE (Home Studio Edition) - £999.95

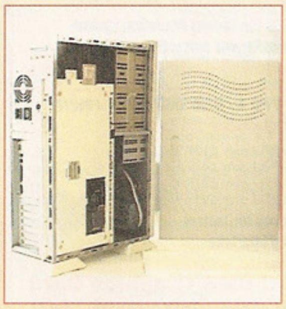
The HSE configuration comes complete with TV tuner with cut-and-paste teletext facilities, 24-bit video frame grabber and video clip capture card, 30 bit colour scanner, 56K modem and unlimited internet access at local call rates - as well as the standard EZPC system components

A1200 EZPC TOWER-DVE (Digital Video Edition) - £1369.95

The DVE is fitted with a purpose-designed, hardware-based MJPEG non-linear video editing suite for home/semi-professional video production. It also comes with built-in CD Writer/ReWriter (with drag-and-drop CD writing software) for producing your own audio and video CDs.

A1200 EZPC TOWER-XLS - £1995.95

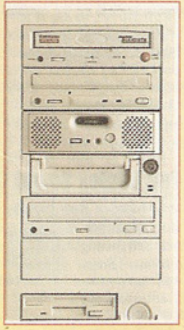
This must be the ultimate creative multimedia expansion platform for your A1200. It comes equipped with non-linear video editing hardware and software, A4 30-bit flatbed scanner, DVD ROM hardware & MPEG 2 decoder (for DVD video playback), CD ReWritable drive, 15" Colour Monitor, 56k data/fax/voice modem with voicemail and internet software - and much more.



The EZPC Tower system showing the A1200, the PC rear sockets, card slots and removable side panels

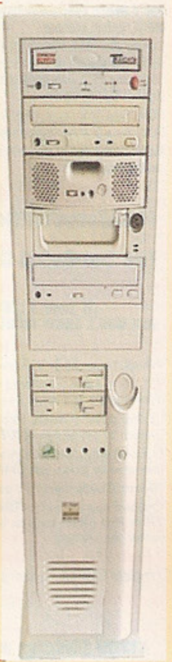
A1200 EZPC TOWER-3.1+ - £395.95

Finally, if your A1200 is feeling a bit tired we can supply your chosen EZPC Tower system with a brand new Kickstart 3.1 A1200, complete with Magic Pack software, 24 Speed CDROM, 3.2 GB hard drive (with W/b & Magic Pack software preinstalled), EZCD Mk4 interface and EZIDE software ready installed and connected up. All you need to do is to slot in your existing accelerator, fit your old hard drive into the external mounting drawer provided (see photo) switch on and start using your new A1200 EZPC Tower system.



All these three packs are designed for you to fit your existing A1200 in the EZPC Tower and connect it up. This normally takes around an hour, but if you would prefer to receive your system ready to use, we can arrange to collect your Amiga, do the work for you and ship your new system back all ready to plug-in to mains and phone outlets! Please ring for details.

EZPC-Pro Tower Model	HSE	DVE	XLS
EZPC-Tower/250W psu/PC mouse/HD floppy	Yes	Yes	Yes
EZ-Key k/b adapter PC k/b & rem switch	Yes	Yes	Yes
BMon/KMon video & k/b switch	Yes	Yes	Yes
Ultra DMA hard drive 4.3GB	Yes	Yes	Yes
Upgrade to 17.2GB UDMA Drive	+£99.95	+£99.95	+£99.95
32-speed CDROM	Yes	Yes	n/a
DVD-ROM (inc 20xCDROM capability)	n/a	+£79.95u/g	Yes
CDReWriter (inc 16xCDROM) & s/w	n/a	Yes	Yes
10 x blank CDR's 650MB	n/a	Yes	Yes
100MHz bus PC motherboard w/64MB	Yes	Yes	Yes
High perf high res 3D Gfx card w/MPEG-1	Yes	Yes	Yes
TV/teletext/framegrabber	Yes	n/a	n/a
Hardware MJPEG Video Editor	n/a	Yes	Yes
Hardware MPEG-2 Video decoder	n/a	+£59.95	Yes
CD-quality sound card with MIDI	Yes	Yes	Yes
Software controlled Amiga/PC audio mixer	Yes	Yes	Yes
Internal 60W PMPO monitor speakers	Yes	Yes	Yes
Siamese RTG2.5 software	Yes	Yes	Yes
Amiga PCMCIA & PC ethernet cards/cabs	Yes	Yes	Yes
30-bit high res A4 flatbed scanner	Yes	+£59.95	Yes
Internal 56k data/fax/voice modem	Yes	+£49.95	Yes
Unlimited access Internet package	Yes	inc. with above	Yes
15" SVGA monitor	+£109.95	+£109.95	Yes
17" SVGA monitor	+£189.95	+£189.95	+£99.95
Win 9.x/Lotus Smartsuite bundle	+£99.95	+£99.95	Yes
Miami Amiga TCP/IP stack	+£24.95	+£24.95	+£24.95
Cost with options as specified	£999.95	£1369.95	£1999.95



ENTRY LEVEL EZPC TOWER SYSTEMS NOW AVAILABLE FROM JUST £599.95

UPGRADE PACKS FOR EXISTING EZTOWER USERS JUST £499.95

The EZPC-Pro Tower configurations (featured on the next page) have produced a tremendous level of interest - and orders - from professional and serious home Amiga users alike. We have also had many requests for a lower cost, entry level solution, from those Amiga users whose budget is more modest. So here it is - the EZPC-SLE - giving most of the potential of the EZPC-Pro systems (featured opposite) in an affordable (but expansible) package.

The EZPC-SLE specification is as follows:

- ✓ Full EZTower Mk4 with removable side panels PSU (not with upgrade kit)
- ✓ PC Keyboard & EZKey-SE/PC adapter & 250w keyboard (not with upgrade kit)
- ✓ 100MHz-bus motherboard with 4x UDMA IDE ports
- ✓ 333M II CPU with 1MB cache memory
- ✓ 2 x high speed serial & 1 x EPP parallel port
- ✓ 32MB 100MHz memory
- ✓ 8MB SVGA SIS Graphics
- ✓ 16 bit 3D sound record and playback
- ✓ 3.2GB UDMA hard drive
- ✓ 24 speed CDROM
- ✓ PC mouse
- ✓ Remote Amiga/PC keyboard switch
- ✓ Siamese 2.1 RTG serial Amiga-PC networking software and cable.
- ✓ TV/Teletext tuner with 24-bit still & video capture and Amiga composite video input
- ✓ EZVGA-INSD internal scandoubler and BMon switch to display your Amiga output on a PC screen

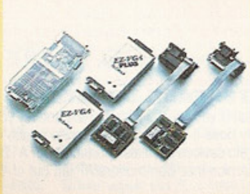
You will also need to have Windows 9x operating system and an SVGA PC monitor - see the panel on the EZPC-Pro Tower system panel for further information.

A collection, installation and delivery service is also available - please ring for details.

EZVGA Scandoublers & Flickerfixers from just £48.95

All scandoublers/flickerfixers allow the Amigas 15KHz modes to display on a PC SVGA monitor. Flickerfixers allow 15KHz interlaced screens to be displayed, rock-steady, at twice the standard vertical resolution. Other modes are passed through unaltered.

EZVGA-Mk2	Compact, external, upgradeable scandoubler (to full FF)	£69.95
EZVGA-Plus	Compact, external scandoubler with full FF	£99.95
EZVGA-SEFF	Economy external scandoubler with full FF	£89.95
EZVGA-INSD	Internal A1200/A4000 scandoubler (not upgradeable)	£48.95
EZVGA-INFF	Internal A1200/A4000 scandoubler with full FF	£79.95
EZVGA-INFF2	Internal A1200/A4000 s/doubler with full FF for BMON	£89.95



AMIGA SVGA MONITORS

For use with Amiga Zorro & the new PPC Graphics Cards, Scandoublers & the EZPC-Tower system



- ✓ Special pricing on scandoublers/flickerfixers bought with monitors from just £45 extra
- ✓ Monitor specifications are quoted as the highest vertical refresh rate at the maximum resolution. Higher refresh rates (>=72Hz) at lower resolutions are available and give a more visually relaxing display.
- ✓ Scandoubler/flickerfixers have resolutions governed by the Amiga's AA/AGA chipset and are restricted to a maximum vertical refresh of 73Hz and a maximum usable resolution of 724Hx566V.
- ✓ The PPC BVision supports 1600x1280@72Hz. You will not gain the full benefit of this superb graphics card without a monitor that supports this resolution at that refresh rate.

14" SVGA 0.28DP, 1024Hx768V @ 60Hz £89.95
15" SVGA 0.28DP, 1024Hx768V @ 60Hz £119.95
17" SVGA 0.28DP, 1280Hx1024V @ 60Hz £199.95

Engineering workstation grade monitor, 160MHz, Diamondtron tube:
17" SVGA 0.25DP, 1600Hx1280V @ 75Hz £399.95

SPECIAL OFFER 15" MONITORS FROM £99.95 - ring for details

6 models of BMON are available from £39.95 - send for details

The BMon takes two video inputs : one from an Amiga's AA chipset (either directly or via a scandoubler/flickerfixer) and the other from a graphics card (BVision, Cybervision, Picasso, Ateo bus card etc) - and switches your SVGA or multisync monitor between them. The BMon uses high quality video switchers so - unlike conventional switchboxes - there is no significant loss of quality from either source. It can also be used - in its SMon form - for switching an SVGA monitor between a PC and Amiga system. As standard the BMon accepts input from a BVision or Cybervision card and from an Eyetech EZVGA internal flickerfixer-2 . It is manually switched by a remote miniature toggle switch positioned - for example - on the front panel of a tower system. The KMon switches keyboard output in an Amiga/PC dual configuration using the same control signals.

The New Eyetech Mk 4 EZTower System - from just £79.95

"This is definitely one of the easiest solutions to building your own Tower" - Amiga Format

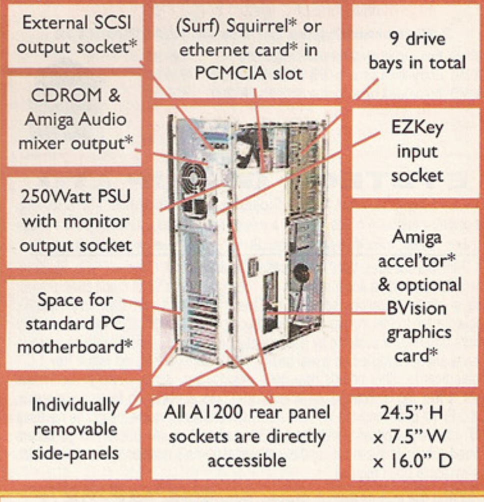
"The Eyetech Tower offers clever solutions with a Velcro easyfit mentality" - CU Amiga

- ✓ The easiest way to re-house your A1200 by far
- ✓ Expand your system with EZPC (EZTower Mk4) or Zorro slots (EZTwr Z4)
- ✓ 250 W PSU with PC and Amiga power connectors
- ✓ No expensive PCMCIA right-angle adapter required
- ✓ Available in 5 models to suit different skills and budgets
- ✓ The only tower allowing both PC & A1200 in one case

	Backplate Kit	DIY* EZTower	Full EZTower
DFO: face plate & ribbon cable	Yes	Yes	Yes
Custom backpanel w/SCSI, audio KOs	Yes	Yes	Yes
A1200 power & LED adptrs	Yes	Yes	Yes
CE-approved metal PC case	n/a	Yes	Yes
No of bays/PSU capacity	n/a	9/250W	9/250W
Directly accessible PCMCIA slot	Yes	Yes	Yes
DIY assembly instructions	Yes	Yes	n/a
Installation instructions	Yes	Yes	Yes
PC board/Siamese compatibility	Yes	Yes	Yes
Assembled & A1200-ready	No	No	Yes
Eyetech installation option	No	No	Yes
Cost with options as specified	£39.95	£79.95	£99.95
With EZKey/PC k/b (w/A4k k/b+£20)	n/a	£99.95	£119.95

*With the DIY EZ-Tower you have to remove the PC tower back panel and some internal shelving and fix the new back panel in place

* Optional extra not included in standard EZTower system



EZBus-Z4

A new Zorro adapter from Eyetech featuring regular Z2 slots and 2x 19MB/s local bus connectors

EZTower-Z4 - A new EZTower specifically designed to take the EZbus-Z4

EZTowerZ4, k/b adapter, PC k.b & EZBus-Z4 £249.95
As above - introductory price - advance orders £199.95

Peripherals & Storage

AWARD-WINNING UMAX SCSI FLATBED SCANNER

lower prices



- **600 x 300dpi optical resolution, single-pass 24-bit A4 flatbed scanner**
- Comes with Photoscope (Amiga) and Mac software. Compatible with all modern SCSI interfaces - including PPC, Blizzard & Classic Squirrel (but not Surf-Squirrel)
- PCW 'Best Scanner of 1998' Award - July 1998; PCW 'Best Scanner' September 1998
- **Highly-acclaimed ArtEffect-SE v1.5 (normally £59.95) free with this bundle whilst stocks last . . . .**

REMAINING STOCK of Amiga UMAX Scanner & PhotoScope/ArtEffect Bundle now just £149.95

The Top-Rated CD-Plus Range for the A1200

"Eyetech have come up with a real winner with this new CDROM drive" - Ben Vost, AF

If your A1200 hasn't got a CDROM then you don't know what you're missing!

At these prices there is really no excuse!

lower prices



- ✓ Whisper quiet 24 or 32-speed CDROM mechanism
- ✓ EZCD-XL 4-device buffered interface, 3-connector 40-way and 2-connector 44-way cables included
- ✓ CDPlus driver software specially written for Eyetech by the author of IDE-fix
- ✓ Optional Amiga and CDDA audio mixer with Gold phono audio jacks - just £14.95 each
- ✓ 20-watt CE-approved PSU complete with 13A plug.
- ✓ Optional upgrade to MiniTower or Desktop case with 230W PSU (which can also hold extra drives and power your Amiga) just £20 extra!
- ✓ **2 Free CDs whilst stocks last**

Complete CDPlus Systems: 24-speed just £74.95; 32-speed just £84.95

Bare mechanisms for Towers: 24-speed just £34.95; 32-speed just £44.95!

A1200 EZWriter and EZReWriter CDROM Burners

Make your own music and data CD's, back up data for less than 0.15p/MB .

lower prices



EZWriter Internal

- ✓ Both are IDE/ATAPI reader/writer units with MakeCD Amiga writing software
- ✓ EZWriter units cut 'Gold' CD blanks at 2x speed & read CDROM's at 8 speed
- ✓ EZReWriter units cut 'Gold' CD blanks and CD rewritable disks at 2x speed and read conventional CD's at 6x speed
- ✓ Gold 650MB CD blanks (for use with either model) are available at ten for £10 at time of purchase
- ✓ CD rewritable disks are just £5 each when bought with the EZReWriter

EZWriter/EZReWriter Options

EZWriter-Bare	for A4000 or A1200 Tower (bare drive - no MakeCD)	£169.95
EZWriter-INT	for A4000 or A1200 Tower (with MakeCD)	£204.95
EZWriter-SE	External A1200 unit with separate 100w PSU	£249.95
EZWriter-Gold	External A1200 unit with int 40w PSU, Gold Audio skts	£279.95
EZWriter-MT	Mini-Tower-cased unit with 230w PSU which can house an additional LS120/Zip/CDROM & power your A1200	£269.95
EZReWriter-Bare	for A4000 or A1200 Tower (bare drive - no MakeCD)	£199.95
EZReWriter-INT	for A4000 or A1200 Tower (with MakeCD)	£238.95
EZReWriter-SE	External A1200 CD ReWriter with separate 100w PSU	£279.95
IDE interfaces	EZCD-SE I/F, 44-way & 40-way cables & CDROM s/w -	add £20
if required . . .	EZCD-Mk4 I/F, 44 & 40-way cables & EZ-IDE s/w -	add £30
	IDE-Flyer interface, cables & s/w -	add £50

A1200 TOWER & INSTANT DRIVES

- ✓ All drives come ready to use with WB3.0 pre-installed & WB2.x install script
- ✓ All drives over 200 MB come with over 45 top quality utilities (not shovelware) and MMe multimedia authoring s/w pre-installed, configured & ready-to-run

LS120 & Zip Drives (ATAPI i/f & EZIDE needed)

LS120 (HD Floppy/120MB Cart) - £79.95 3 x 120MB carts - £29.95

Zip Drive (Mac emul. compatible) - £79.95 3 x 100 MB carts - £29.95

TowerDrives (3.5" drives, 25mm high)

2.5GB - £89.95 3.2GB - £99.95 4.3GB - £109.95

17.2GB drive for EZPC system or IDE Flyer - £249.95

2.5" InstantDrives for the A600/A1200/SX32

20MB	Entry-level drive for the SX32/A600	£29.95
170MB	Entry-level drive for the SX32Pro/A1200	£49.95
260MB	Entry-level drive for the SX32Pro/A1200	£59.95
3.2GB	Ultraslim 9mm drive - A1200/600/SX32	£169.95
4.1GB	Ultraslim 9mm drive - A1200/600/SX32	£189.95



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Net: sales, info @eyetech.co.uk. www.eyetech.co.uk.

UK Bank/BS cheques, Visa*, Mastercard*, Switch, Delta, Connect, Solo, Electron. Postal/Money orders accepted. (*A 3% charge applies to all credit card orders). Due to space limitations some of the specs given are indicative only - please ring/write for further details. Please check prices, specification and availability before ordering. If ordering by post, please provide a daytime telephone number. Goods are not supplied on a trial basis. A1200 items are tested with a Rev 1.D.1 motherboard - other boards may need modification. Items subject to mechanical wear & tear (eg keyboards) are limited to 90 days warranty on those components. E.&O.E. All prices include VAT at 17.5%. Orders sent outside the EC do not incur VAT - divide the prices shown by 1.175 to arrive at ex-VAT prices. All goods are offered subject to availability and our standard terms & conditions, a copy of which are available upon request.

UK Next Day Insured Delivery Charges: Software/Cables, EZCD I/F = £3.00 2.5" Drives, Accelerators, Manuals = £7.00, 3.5" Drives, FDDs, PSUs, SX32 = £9.00, CDPlus, Minitower, Desktop = £11.00, EZTW & EZPC = £15.00. Worldwide in 2-7 days from receipt of faxed order & payment details.

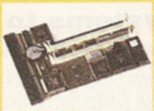
EYETECH

Accelerators & Interfaces

NEW

APOLLO Accelerators for the A1200

1230/40 TURBO PRO MK3



High performance 1 or 2 simm entry level accelerators for A1200 desktop consoles or tower systems

MMU, FPU & 1 SIMM socket to 32MB only **£59.95**

MMU, FPU & 2 SIMM sockets to 64MB only **£69.95**

A1240/28	'040/28MHz/MMU/FPU*	(21 MIPS)	£124.95
A1240/40SE	'040/40MHz/MMU/FPU*	(30 MIPS)	£167.95
A1240/40	'040/40MHz/MMU/FPU*	(30 MIPS)	£184.95
A1260/50	'060/50MHz/MMU/FPU*	(39 MIPS)	£264.95
A1260/66	'060/66MHz/MMU/FPU*	(51 MIPS)	£349.95
A1260/75LC	'060/75MHz/MMU*	(60 MIPS)	£264.95

TIP Buy your memory with the accelerator to ensure full compatibility

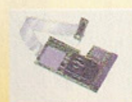
*To 32MB. Optional 2nd simm socket (tower only) offers 64MB total

The Apollo A1260/75LC is the fastest Operating System-supported Amiga accelerator currently available

20% off memory prices when bought with an Apollo or phase5 accelerator

phase5 PowerUp A1200 PPC + '040/'060 Accelerators

Without SCSI (not upgradeable) inc. MMU & FPU



160 MHz 603e PPC '040/25/MMU.FPU only £199.95
160 MHz 603e PPC '060/50/MMU/FPU only £479.95
240 MHz 603e PPC '040/25/MMU/FPU only £319.95
240 MHz 603e PPC '060/50/MMU/FPU only £549.95

Add just £60 to the above prices for factory fitted on-board Fast SCSI II Interface

Blizzard Vision PPC 8MB Graphics Card

Unbelievable quality and speed - 1600x1280@72HZ! No Zorro slots needed!

NEW! 8mb card - £159.95 or just £139.95 with a PPC

The fastest, most highly specified graphics card you can buy for your A1200

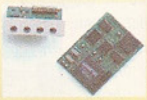
A1200 Clock Port Expansion Cards

For non-Zorro A1200s the best expansion route is via the (unused) clock port

PortJunior Mk2	1x 460kb serial port	39.95
IOBlix1200S	1x 1.5 MB/s serial port	49.95
IOBlix1200P	1x EPP parallel port	49.95
(Drivers for PC parallel port scanners, Zip drives etc., available shortly)		
PortPlus Mk2	2x460kb serial & 1x800kb parallel port	69.95
Catweasel-2	HD Amiga/PC floppy controller	49.95
ClockUp	4-way clock port expander	19.95

Prelude 16bit Hi-Fi Full Duplex Sound Card

"Easily the best A1200 sound card so far" - Tony Horgan, AF April 99



- ✓ Clockport fitting - no Zorro slots required
- ✓ Simultaneous recording, playback and mixing
- ✓ MIC, CD, AUX (Amiga audio) & line 3.5mm jack inputs. 3.5mm jack output to speakers.
- ✓ Mixes CD & Amiga audio etc., automatically on bootup without invoking application programs.
- ✓ Extensive software support including Samplitude, Octamed SS & AHI drivers & PPC-based MPG3 audio playback

Desktop: £129.95 Tower : £149.95 Zorro: £189.95

Parallel & Serial expansion for Zorro-based systems

IOBLIX expandable Z2 I/O card for Tower Systems 2xS, 1xP - £89.95

BUFFERED INTERFACE UPDATE

A buffered IDE interface is essential if you are considering expanding your A1200's storage capability. Not only does it give you the option to attach up to 4 hard drive/CDROM/LS120/Zip etc devices but it also protects your A1200 by putting back the buffering electronics that Commodore/AT left out of the A1200 design.

However ... it is not just enough to buffer a few control signals - as with one-chip interface designs. It is also essential that the interface incorporates bidirectional data bus buffers (such interfaces need at least a 3 discrete chips and some additional components) to ensure that all the chips on your motherboard are properly protected

Without data bus buffering ALL the data signals from ALL the custom chips are permanently connected to the IDE interface (and associated cables, drives etc). But the custom chips themselves only have sufficient output to drive one IDE device and then only on a short data cable. Without data bus buffering these chips are likely to be overloaded, causing system instability and/or loss of data on your hard drive. All 1200 buffered interfaces supplied by Eyetech are multichip designs with full data and control line buffering.

In addition, if you have a higher speed accelerator ('040 processor or above) then you should choose the high-performance EZCD-MK4 interface with AIPU technology for the best all-round performance.

If you are thinking of getting a hard drive larger than 4.3GB then you should buy the IDE-Flyer - or wait for OS3.5 which properly supports these drives and gives new, compatible versions of FFS, Format & HDToolbox programs.

EZCD Buffered Interfaces	SE	Mk4
4-Device Buff Interface & CDROM Software	£18.95	£28.95
CDROM s/w, 3x40 & 2x44-way cables	£28.95	£38.95
EZ-IDE s/w, 3x40 & 2x44-way cables	£38.95	£48.95
Elbox IDE Flyer I/F& CDROM file system (>4.3GB HD Support)		£54.95

EZKey2

- ✓ Autodetects and remaps Amiga & PC keyboards
- ✓ Plugs directly into the ribbon cable slot on the A1200

EZKey2 alone - for A1200 only - just	**£28.95**
EZKey2 and Windows keyboard	**£38.95**
EZKey2, A4000 k/b & 6-to-5 pin adapter	**£58.95**

EZKeySE

- ✓ Separate models for Amiga & PC keyboards
- ✓ Amiga version & k/b detects all multi-key combinations

EZKey-SE/Amiga - for A1200 & A600 - just	**£18.95**
EZKey-SE/Amiga A4K k/b & 6-5 pin adptr	**£48.95**
EZKey-SE/PC - for A1200 & A600 - just	**£24.95**
EZKey-SE/PC and Windows keyboard	**£34.95**

Due to variations in exchange rates the prices of some products may change - up or down - from the prices shown. Please ring or check our website [www.eyetech.co.uk/MAIN/APRICE.HTM] for the latest prices before ordering.

The Eyetech Gold Collection

Simply the best serious software you can buy for your Amiga!

Scala MM400



The best ever presentation and video editing software for the Amiga with extra backgrounds & fonts. Guaranteed to make MS PowerPoint users' jaws drop.

MM400 - £59.95 MM300☆MM400u/g £39.95

UltraConv 4



The most comprehensive still image and animation conversion software available. Has over 130 built-in effects, batch conversion, QT AV builder w/audio, etc

UC4 - £39.95 UC4 bought with SQ4 £29.95

ScanQuix 4



The definitive Amiga scanner driver for most Epson HP, Artek, Mustek & Canon SCSI scanners & Epson parallel. Also ScanExpress 6000P via the IOBlix12P.

SQ4 - £59.95 SQ3⇨SQ4 u/g £29.95

PhotoScope



Software specially designed for the award-winning UMAX 610S, 1200S & 1220S SCSI 30-bit A4 flatbed scanners by the author of ScanQuix.

PHS- £59.95 PHS/ArtEfx/Umax Scner- £149.95

CamControl



Digital Camera serial interface control & download software for the Amiga for most popular Kodak, Fuji, Casio, Minolta, Mustek and Olympus digital cameras.

CamControl - £59.95

Samplitude



The definitive Amiga hard disk recording, sampling and FFT filtering package. Samplitude Opus allows virtual (non-destructive) projects of 16 tracks (4 in LE)

SampOpus - £149.95 SampOpus-LE - £49.95

Siamese RTG



The out-of-the-box Amiga-to-PC networking software which also allows you to use the PC's screen as a high res Amiga graphics card. 2.5 uses ethernet, 2.1 serial

SiSysRTG-2.1- £19.95 SiSysRTG-2.5- £89.95

MakeCD



The best CD-burning software for the Amiga, with extensive audio-CD support. For most SCSI & some ATAPI CDWriters/ReWriters. Bundled with EZWriter.

MCD3.x- TAO-Private - £38.95

Netconnect



The all-in-one internet package for the Amiga including 11 highly integrated programs covering all internet-related activities from email and Web to newsgroups.

NC2.x - £49.95 NC2.x & NET-ISP - £69.95

TurboPrint 7



The most comprehensive, fastest replacement system for your Amiga. Supports the latest printers from most main manufacturers. Colour correction, spooling etc

TB7.x - £38.95 TB6.x⇨TB7.x u/g £19.95

Miami



The definitive 'click and go' TCP/IP stack for the Amiga with built-in dialler. Essential for internet access or networking your Amiga to other computers.

Miami 3.x - £24.95

Workbench



Official Workbench disks for your Amiga. All packs include hard disk install software. WB3.1 & WB3.5 require 3.1 Kickstart ROMs (also available from us).

WB3.0 - £9.95 WB3.1 - £14.95 WB3.5 - £34.95(est)

EZ-IDE



The best replacement 4-device hard disk driver software available for a stock A1200/4000 which also supports ATAPI CDROM, CDWriters, LS120 & Zip drives.

EZIDE: £34.95 EZCD s/w⇨EZIDE u/g £14.95

WB2.x WB3.x Floppy disk
CDROM PPC ready AREXX enabled
Special bundle prices may apply - please ring
Upgrade/trade-in price available - please ring

EYETECH AMIGA PARTS & PRICE INDEX SEPT 1999 - - TEL: +44 (0)1642-713-185 - 07000 4 AMIGA - - EMAIL: sales@eyetech.co.uk

Interfaces and Adapters: EZ-Key, DIY Tower Components

ADPT-EZK2	Mk 2 Amiga/PC k/b adpt -> A1200 kbd direct connect	28.95
ADPT-EZK2-W95	Mk2 Amiga/PC k/b->A1200 dir connect +Win95 kbd	38.95
ADPT-EZSE-A	EZKey-SE Amiga 5p DIN k/b adapter for A1200/A600	18.95
ADPT-EZSE-A/K	EZKey-SE Amiga + 6p->5p adptr + A4000 kbd bundle	48.95
ADPT-EZKSE-P	EZKey-SE PC 5p DIN k/b adapter for A1200/A600	24.95
ADPT-EZKSE-P/K	EZKey-SE PC k/b adapter for A1200/A600 + Win95 kbd	34.95
ADPT-HD-2/3	2.5"/44way->3.5"/40w+4w adpt & 2.5->3.5 mtg bracket	11.95
ADPT-HD-3/5	3.5" Zip/SyQuest/FDD/HD brkt/pl ->5" bay	5.95
ADPT-KBD-5P6P	Amiga/PC k/b adapter 5p din-F ->6p m/d-M	5.95
ADPT-KBD-6P5P	Amiga/PC kbd adapter 6p mindin-F ->5pd-M	5.95
ADPT-DF0-FP	Tower faceplate adapter for A1200 int FD	4.95

Interfaces and Adapters: A1200 Ethernet, SCSI

ADPT-PCM-ETH-C	PCMCIA ethernet card with Amiga/PC drivers	79.95
ADPT-PCM-ETH-H	Hydra PCMCIA ethernet card with Amiga drvrs	129.95
CAB-UPT-X60C	Crossed twisted pair/RJ45 for Sisys 60cm	6.95
CAB-ETH-3M	Ethernet Coax + 2 x terminator 3m	9.95
ADPT-SCS-CSQR	Classic Squirrel PCMCIA SCSI i/f 50pCM	69.95

I/F & Adapters: Flickerfixers, Genlocks, Video Digitisers VGA Adapters, Monitor Switches, Monitor Leads

ADPT-VGA-BV8M	BVision 8MB gfx card for A1200 (needs PPC)	159.95
ADPT-VGA-BMON/F	SVGA Monitor Switcher - BVision/CVision & EZVGA INFF2	39.95
ADPT-VGA-BMON/V	SVGA Monitor Switcher - BVision/CVision & 15pHD In/Ex SD/FF	44.95
ADPT-VGA-BMON/A	M/Sync Monitor Switcher - BVision/CVision & 23p RGB socket	44.95
ADPT-VGA-SMON/F	SVGA Mon Switch - Ateo/Picasso 15pHD Gfx & EZVGA INFF2	44.95
ADPT-VGA-SMON/V	SVGA Mon Switch - Ateo/Pic'o 15pHD & 15pHD In/Ex SD/FF	49.95
ADPT-VGA-SMON/A	M/Sync MonSwitch - Ateo/Pic'o 15pHD & 23p RGB socket	49.95
ADPT-VGA-AMON	Auto Amiga/CV64-3D m/sync monitor switch	39.95
ADPT-VGA-M2SD	EZ-VGA-Mk2 compact external s/doubler PLL u/gradable	69.95
ADPT-VGA-PLFF	EZ-VGA-Plus compact external SD+FF 23F-15F PLL	99.95
ADPT-VGA-SDUG	SDBL2 to SD+flickerfixer u/g	40.00
ADPT-VGA-INSD	EZ-VGA internal A1200 s/doubler non-upgradable	48.95
ADPT-VGA-INSD2	EZ-VGA internal A1200 s/doubler for use with BMON	59.95
ADPT-VGA-INFF	EZ-VGA internal A1200 scandoubler w/ flickerfixer	79.95
ADPT-VGA-INFF2	EZ-VGA internal A1200 SD+FF for use with BMON	89.95
ADPT-VGA-SEFF	EZ-VGA-SE scandoubler+flickerfixer 23F-15F Xtal	89.95
ADPT-VGA-15M9F	Adapter from 15p HD-M VGA to 9pD-F	9.95
ADPT-VGA-9M15F	Monitor adapter 9p D-F to 15p HD-M	9.95
ADPT-VGA-15M23M	VGA 15pHD-M -> 23pD-M Amiga RGB adapter	14.95
ADPT-VGA-UNBF	Amiga 23pD-F ->15pHD-F VGA adapter	12.95
ADPT-VGA-BUF	Amiga 23pD-F ->15pHD-F buffered adapter for A4000	16.95
ADPT-PGB-24RT	ProGrab 24-RT Amiga par. port video digitiser (no psu)	94.95
ADPT-PGB-PSU	PSU for ProGrab 24-RT	9.95
ADPT-GLK-COMP	EZ-Gen composite video Genlock for A1200	69.95

Interfaces and Adapters: A1200 Sound cards & Software

INT-AUD-PL12-DT	Prelude1200 for A1200 DT console only	129.95
INT-AUD-PL12-TW	Prelude1200 for Tower w/ribbon cble/audio I/O brkt, CD i/f	149.95
INT-AUD-PL12-UG	Upgrade node from PL12-DT to PL12-TW	20.00
INT-AUD-PLZ2	Prelude ZorroII 16-bit full duplex sound card	189.95
ASW-SMP-OP	Samplitude Opus 16 channel, virtual projects, FFT filtering	149.95
ASW-SMP-LE	Samplitude-LE 4 channel , virtual projects, FFT filtering	49.95

I/F & Adapters - IDE/ATAPI & Software

INT-IDE-FLYR	Elbox 4-dev 32 bit high perf buf'd A1200 IDE i/f	54.95
ADPT-FLR-SPC-SP	ROM spacers for Elbox IDE-Flyer purchased w/ IDE-FLYR	4.95
ADPT-FLR-SPC	ROM spacers for Elbox IDE-Flyer purchased elsewhere	8.95
INT-12I-EZCD4	Mk4 4-dev buf IDE i/f w/AIPU w/A1200 CDROM s/w	28.95
INT-12I-EZCD4/C	Mk4 4-dev buf IDE i/f w/3x40, 2x44 13cm cabs, CD s/w	38.95
INT-12I-EZCD4/CE	Mk4 4-dev buf IDE i/f w/3x40, 2x44 cabs, EZIDE	48.95
INT-12I-EZCDSE	Economy 4-dev buf IDE i/f w/A1200 CDROM s/w	18.95
INT-12I-EZCDSE/C	Econ 4-dev buf IDE i/f w/3x40, 2x44 13cm cabs, CD s/w	28.95
INT-12I-EZCDSE/CE	Econ 4-dev buf IDE i/f w/3x40, 2x44cabs, EZIDE	38.95
INT-4KI-CD4	4-device EIDE i/f for A4000 w/CDROM s/w	18.95
DVR-EZIDE	EIDE/ATAPI HD/CDROM/ZIP/LS120/SyQst drvr	34.95
DVR-EZIDE-CU	P/x upgrade to EZIDE from competitive product	14.95
DVR-EZIDE-SP	EIDE/ATAPI enhancer/CDROM Software Bundle Price	9.95

I/F & Adapters-Serial, Parallel, Floppy, Clock port expanders

INT-SER-PTJR	PortJunior Mk2 - 460KB serial i/f for A1200	39.95
INT-12I-PTJR-SP	PortJunior Mk2 hi-speed ser i/f pur with CamControl s/w or KBPlus	30.00
INT-IOBL-S12	IOBlix 12S - 1.5Mbps serial i/f for A1200	49.95
INT-IOBL-P12	IOBlix 12P - EPP parallel port i/f for A1200	49.95
INT-SER-PTPL	PortPlus Mk2 - 2x 460KB ser + 1x 800KB par i/f for A1200	69.95
INT-IOBL-Z2	IOBlix Z2 - 4x1.5Mbps ser + 1x EPP par port ZorroII	89.95
INT-IOBL-Z2PX	1x EPP par port expan for INT-IOBL-Z2 (to 4xs+2xP)	19.95
INT-CLK-EXP	ClockUp 4-way clock port expander for A1200	19.95
INT-FDD-DF0	Interface for std Sony FDD for DF0 880KB	9.95

Cables & Cable Adapters: Audio & Mains

CAB-AUD-CD	CDROM invt'd T audio cab .6m + 2xRCA plg	9.95
CAB-AUD-MIX	RCA(phono)-M -> RCA-M+RCA-F 'Y' mixer lead 1.8m	6.95
CAB-AUD-2M2M	RCA(phono)-2xM -> RCA2xM stereo lead 1.8m	4.95
CAB-AUD-MJ/PH	3.5mm st minijack->2xphono-M plugs 1.2m	5.95
ADPT-AUD-MJF/2PM	3.5mm stereo jack to 2 x phono male	3.95
ADPT-AUD-RCA	RCA(phono)-M -> 2xRCA-F adapter 'Y' mixer	2.50
ADPT-AUD-RCA-G	RCA(phono)-M ->2xRCA-F gold plated adapt 'Y' mixer	3.50
CAB-IEC-1.5M	AC power cable 13A plug -> IEC skt 1.5m	2.50
PLUG-IEC	Rewirable IEC monitor plg for PSUs/MT/DT	4.95

Cables & Cable Adapters: Serial, Modem, SCSI, Printer

CAB-SER-EX2M	DB25-M -> DB25-F RS232 extn cab 2m for modem	7.95
CAB-SER-EX50C	DB25-M -> DB25-F RS232 extn cab 0.5m for modem	6.95
CAB-SER-NUL2M	Null modem cable w/ D9F & D25F at each end 2m	9.95
CAB-SER-NUL5M	Null modem cable w/ D9F & D25F at each end 5m	14.95
CAB-SER-NUL10M	Null modem cable w/ D9F & D25F at each end 10m	19.95
ADPT-SER-25F9M	25p-F to 9p-M serial RS232 adapter	4.95
ADPT-SER-25M9F	25p-M to 9p-F serial RS232 adapter	4.95
ADPT-SER-9M9M	9p-M to 9p-M serial RS232 gender changer	4.95
ADPT-SER-9F9F	9p-F to 9p-F serial RS232 gender changer	4.95
ADPT-SCS-50/50CF	Centronics 50p-F to Centronics 50p-F (for Squirrel)	14.95
CAB-SCS-25D/50C	SCSI cable DB25-M to Cent50-M 1m	9.95
CAB-SCS-25D/25D	SCSI cable DB25M to DB25M mac type 1m	9.95
CAB-SCS-50C/50C	SCSI cable Centr50M to Centr50M 1m	9.95
CAB-SCS-50H/50C	SCSI-2 cable 50h/pDM to Centr50M 1m for PPC	19.95
CAB-SCS-50H/25D	SCSI-2 cable 50h/pDM to 25D-M 1m for PPC	19.95
CAB-PAR-FULL	Bidirectional printer cable all pins connected	9.95

Cables & Cable Adapters: VGA, Keyboard, Switchboxes, Cables, Scart Cables (See also BMON, SMON autoswitches above)

ADPT-SW-S/K	Dual monitor & k/b switchbox	14.95
ADPT-SW-S/K/M	Dual monitor, k/b & mouse switchbox	19.95
CAB-KBD-MF	5p DIN M - 5p DIN F k/b ex cable 1.2m	7.95
CAB-KBD-MM	5p DIN M - 5p DIN M k/b cable 1.2m	7.95
CAB-VGA-MF	15p DM-HD - 15p DF-HD VGA ext cable 2m	9.95
CAB-VGA-MM	15p DM-HD - 15p DM-HD VGA cable 2m	9.95
ADPT-SCAR-CMP	Amiga comp video (RCA)+2xAudio to SCART	12.95
ADPT-SCAR-RGB	Amiga 23p+2xRCA to RGB TV SCART + audio	12.95

Cables: HD, CDROM, Floppy, Clock Port Data, A1200 HD Power

CAB-PD-40F44F	2.5" (44F) to 3.5" (40F) data cab adapt for A1200 30cm	9.95
CAB-PD-2F	Power splitter floppy drive to hard drive + floppy	9.95
CAB-PD-30C	44 to 40way 3.5" HD data & pwr cabs - A1200	14.95
CAB-HD-KIT	A1200 full 3.5" hard drive fitting kit	24.95
CAB22-2W-10C	22way-F x2 A1200 clock port cable 10cm o/a	5.00
CAB34-2W-50C	34way-F x2 FDD ribbon cable for tower 50cm	9.95
CAB40-2W-20C	40 way IDE cable 2 connector 20cm	5.00
CAB40-3W-1M	40Way IDE/HD/CD cable 3 connector 1m o/a len	9.95
CAB40-3W-60C	40w-F x3 HD/CD/IDE cable 20+40=60cm o/a	9.95
CAB40-CUST	Custom cable 3x40way IDE up to 1.5m	19.95
CAB44-2W-13C	44way (2.5" HD) cable 2 connector, 13cm o/a	9.95
CAB44-2W-60C	44way (2.5" HD) cable 2 connector, 60cm o/a	19.95
CAB44-3W-12C	44way (2.5" HD) cable 3 connector, 12cm o/a	12.95
CAB44-3W-24C	44way (2.5" HD) 7+17cm,3 connector,24cm o/a	14.95
CAB50-CUST	Custom cable 50way SCSI 60cm w/4 x Cent or IDC con'trs	19.95

Cables: HD, CDROM, Floppy Power Splitters-Tower Systems

CABPW-1W-1F	Power converter cab HD-M -> FD-F	4.95
CABPW-2W-1H1F	HD/FD power splitter HD-M->1xHD-F/1xFD-F	6.95
CABPW-2W-2F	FDD power splitter 4pM->2xFD-F	6.95
CABPW-2W-2H	HD/CD power splitter 4p-M ->2x 4p-F 15cm	6.95
CABPW-3W-2H1F	HD/FD power splitter HD-M->2xHD-F/1xFD-F	8.95
CABPW-3W-3H	HD power splitter HD-M -> 3xHD-F	8.95
CAB-HD-PWXTN	4p-M -> 4p-F HD/CD power cab ext 90cm	9.95
CAB-HD-FD/4	23p [illegible] floppy -> 4p-F HD/CD power 90cm	9.95

ISDN Term [illegible] Adapters, 56k Modems & Net Access Bundles

even lower prices

NET-ISP	[illegible] setup/support/unlimited usage/no ongoing net [illegible] (0845 call charges only) with 25MB web [illegible] email addresses, 90 days free net support.	29.95
NET-EYE-1	128Kbps ISDN T/A + NET-ISP as above	129.95
NET-EYE-3	128K ISDN T/A, Netconnect 2 + NET-ISP	169.95
NET-EYE-5	56Kb fax/voice modem + NET-ISP as above	89.95
NET-EYE-7	56Kb fax/voice mdm, Netconnect 2 + NET-ISP	99.95
MOD-56K	56K Voice/Data/Fax Modem External inc serial cable	69.95
MOD-ISDN	128K External ISDN terminal adapter inc serial cable	99.95
NET-REF	Internet Reference Book by D. Winder	2.00
NET-NC2	Netconnect 2.2 software	49.95

CDROM Systems including EZ-Tower & MT/DT Bundles

CD-SE-24X	CDPlus-SE system 24 speed with CDROM s/w	74.95
CD-SE-32X	CDPlus-SE system 32 speed with CDROM s/w	84.95
CD-DT/MT-24X	CDPlus Desktop/Minitower 24 x with CDROM s/w	94.95
CD-DT/MT-32X	CDPlus Desktop/Minitower 32 x with CDROM s/w	104.95
ADPT-AUD-CDSE	CDPlus-SE A1200/CD audio mixr/adapter	14.95
CAB44-CD-13C	44way (2.5" HD) cable purch with CD/HD 13cm	6.00
CAB40-DDC	A1200 IDE skt adptr 40F-40M with mtgs 15cm	9.95
CD24-BARE	Bare 24 speed CDROM mechanism for twr/A4k	34.95
CD32-BARE	Bare 32 speed ATAPI CDROM mechanism for twr/A4k	44.95

CDWriter/ReWriter Systems inc. EZ-Tower & MT/DT Bundles

CDR-BARE-2X8	EZWriter Mechanism (no MakeCD)	169.95
CDR-IN-2x8	EZWriter 2/8x with MakeCD for A4000,Tower	204.95
CDR-SE-2x8	EZWriter-SE external 2/8x with MakeCD	249.95
CDR-DT/MT-2x8	EZWriter Desktop/Minitower 2/8 speed with MakeCD	269.95
CDR-PL-2x8	EZWriter-Gold external 2/8x with MakeCD	279.95
CDRW-BARE-226	EZReWriter Mechanism (no MakeCD)	199.95
CDRW-IN-226	EZReWriter 2x2x6 w/MakeCD for A4k,Twr	238.95
CDRW-SE-226	EZReWriter-SE external 2x2x6 w/MakeCD	279.95
CDRW-PL-226	EZReWriter-Gold external 2x2x6 w/MakeCD	299.95
CDR-CDSE-UG	EZCD-SE+40+44way cabs + CDROMs/w w/CDR	20.00
CDR-CDM4-UG	EZCDMk4+40+44way cabs + EZIDE s/w w/CDR	30.00
CDR-CDFL-UG	IDE-Flyer high-speed IDE i/f, s/w, cabs purch w/CDR	50.00
CDR-DSK-10	Recordable CD media (WORM) 650MB x10	14.95
CDR-DSK-10-SP	Recordable CD media 650MBx10 pur w/EZWriter	10.00
CDRW-DSK	Single CDrewritable disk 650MB	9.95
CDRW-DSK-SP	Single CDrewritable disk 650MB pur w/EZReWriter	5.00
DVR-MCD-TAO-P	MakeCD TAO (P) Amiga CD rec s/w w/ATAPI	38.95

EZTowerZ4 Systems, Z4 busboard expansions

CASE-DTZ4	DIY EZTower-Z4 250W PSU, LED adpt, FD cab/fp	89.95
CASE-DTZ4-PL	DIY EZTower-Z4 250W PSU, EZKey, PC kbd, FD cab/fp	109.95
CASE-DTZ4-PLZ4	DIY EZTwr-Z4, EZKey, PC kbd, FD cab/fp Z4 slots	239.95
CASE-RTZ4	Ready-to-Use EZTwr-Z4 250W PSU, LED adpt, FD cab/fp	109.95
CASE-RTZ4-PL	RTU EZTower-Z4 250W PSU, EZKey, PC kbd, FD cab/fp	129.95
CASE-RTZ4-PLZ4	RTU EZTwr-Z4 250W, PC kbd/adpt, FD cab/fp, Z4 slots	259.95
ADPT-Z4	Z4 adapter for A1200 5xZ2, 2xZ4, 2xclock ports	149.95
ADPT-Z4-SP	Z4 adapter as above 1st 100 orders	129.95
CASE-FT-A4KUG	EZ-Tower upgrade from PC to A4000 k/b (time of purch)	20.00

EZTower Systems, MiniTower/Desktop Cases & Accessories

CASE-FT-DIY	EZTwr Mk4 kit w/250W, FD cab/fp, bkpl for self conv'n	79.95
CASE-FT-DIY-PLUS	EZTower kit w/250W PSU, EZKey, PC kbd, FD cab/fp	99.95
CASE-FT-RTU	Ready-built EZTower 250W PSU, LED adpt, FD cab/fp	99.95
CASE-FT-RTU-PLUS	Ready-built EZTwr w/250W, EZKey, PC kbd, FD cab/fp	119.95
CASE-DT	Desktop case with 200W+ psu for HD/CDROM	29.95
CASE-MT	MiniTower case wth 200W+ psu for HD/CDROM	29.95
CASE-FT-A4KUG	EZ-Tower upgrade from PC to A4000 k/b (time of purch)	20.00
CASE-FT-EXKT	EZ-Tower conversion kit - No PC Tower	39.95
ADPT-AUD-EZTW	EZTwr audio mixer/adapter for A1200/CDROM	14.95
ADPT-SCSI-EZTW	EZTwr SCSI adpt 30cm 2xCent50F, 1xIDC50F	14.95
ADPT-PWR-PPC	2nd A1200 m/bd powerfeed adapter (if req'd) for PPC acc	19.95
CAB-SER-SSQ	9pDM->9pDF SurfSquirrel EZTwr serial extn cable 50cm	9.95

SVGA Monitors- require SD and/or FF to use all Amiga modes

MON-14-.28	14" dig SVGA 0.28DP 1024x768@60Hz	89.95
MON-15-.28	15" dig SVGA 0.28DP 1024x768@60Hz	119.95
MON-17-.27	17" dig SVGA 0.27DP 1280x1024@60Hz	199.95
MON-17-.25	17" SVGA 160MHz,0.25DP,1600x1280@75Hz Diamondtron	399.95
ADPT-MON-SEFF	EZVGA-SE ext flickerfixer purch w/ monitor	85.00
ADPT-MON-M2SD	EZVGA-Mk2 ext s/dblr u/g'able purch w/ monitor	65.00
ADPT-MON-PLFF	EZVGA-Plus ext flickerfixer purch w/ monitor	90.00
ADPT-MON-INSD	EZ-VGA internal s/doubler purch w/ monitor	45.00
ADPT-MON-INSD2	EZ-VGA internal s/doubler purch w/ monitor for BMON	55.00
ADPT-MON-INFF	EZ-VGA internal f/fixer purch w/ monitor	75.00
ADPT-MON-INFF2	EZ-VGA internal f/fixer purch w/ monitor for BMON	85.00

Digital Cameras and Amiga Digital Camera Software

CAM-MIN-DMV	Minolta Dimage-V digicam w/psu, case, 2MB card CamC'trol	259.95
CAM-MIN-DMV-SM2	2MB Smartmedia card for Minolta Dimage-V digital camera	19.95
CAM-MIN-DMV-B40	40 x AA alkaline cells for Minolta Dimage-V digital camera	24.95
DVR-CAM-CAS	CamControl s/w for Casio QV10/100/300/700	29.95
DVR-CAM-FUJ	CamControl s/w for Fuji DS5/DS7 /DX7/DX9	29.95
DVR-CAM-KOD	CamControl s/w for Kodak DC20/DC25	29.95
DVR-CAM-MIN	CamControl s/w for Minolta Dimage V	29.95

Application Software & Drivers

ASW-MM400	Scala MM400 on CD	59.95
ASW-MM400-UG	Scala MM400 on CD with u/g from MM300	39.95
DVR-TBPR7	TurboPrint 7.x Amiga printer driver (English)	38.95
DVR-TB6/7-UG	TurboPrint 6.x to 7.x upgrade (send TB6 disk with order)	19.95

Amiga Image Conversion/Effects Software, Scanner Software, Scanner Bundles and Adapters

SCN-FBA4-BDL3	UMAX award-winning SCSI A4FB scanner with PScope	149.95
DVR-SQ4	ScanQuix4 + 1 driver (Epson/HP/Artec)	59.95
DVR-SQ4-U	ScanQuix4 + 1 driver (UMAX)	79.95
DVR-SQ4-UG	ScanQuix3 to SQ4 upgrade (trade-in & receipt reqd)	29.95
DVR-PHS	PhotoScope UMAX-SCSI Amiga Scanner Driver	59.95
ASW-UCV4	Ultraconv 4 Graphics, animation & effects Amiga s/ware	39.95
ASW-UCV4-SP	Ultraconv 4 Graphic s/w etc purchased with ScanQuix4	29.95
CAB-SCS-25D/50C-S	SCSI cable DB25-M to Cent50-M 1m pur with scanner	5.00
CAB-SCS-25D/25D-S	SCSI cable DB25M to DB25M mac type pur with scanner	5.00
CAB-SCS-50C/50C-S	SCSI cable Centr50M to Centr50M 1m pur w/scnr	5.00
CAB-SCS-50H/50C-S	SCSI-2 cable 50h/pDM to Cent50M 1m for PPC pur w/scnr	10.00
CAB-SCS-50H/25D-S	SCSI-2 cable 50h/pDM to 25D-M 1m for PPC pur w/scnr	10.00
ADPT-SCS-CSQR-SP	Classic Squirrel PCMCIA SCSI i/f 50pCM pur w/scnr	54.95
ACC-SCS-BLM4-SP	SCSI/Simm socket for Bliz 1230/50 Mk4 pur w/scnr	59.95
ADPT-SCS-50/50CF-SP	Centronics 50p-F to Centronics 50p-F (SQ) pur w/scnr	7.50
ADPT-SQ3-PAR	SQ3 adapter Epson scanner ->parallel port cable	9.95

Hard & Floppy Drive, CDROM, LS120 & Zip Mech. & Cases

FDD-ITL-1200	Replacement A1200/600 int FDD 880KB	24.95
FDD-ITL-BARE	Bare 1.44/880 Sony FDD for tower (needs EZDF0/Catwsl)	19.95
FDD-ITL-D/C/I	Twr int 880Kb FDD(Sony/EZDF0/cab bundle)	29.95
FDD-ITL-D/I	Twr intl 880Kb FDD (Sony/EZDF0) No cable	24.95
HD2-21	21MB 2.5" hard drive 90 days warranty	29.95
HD2-170	170MB 2.5" hard drive	49.95
HD2-260	260MB 2.5" hard drive	59.95
HD2-3.2	3.2GB ultra slim 2.5"drive, 9mm high (2 fit in std A1200)	169.95
HD2-4.1	4.1GB ultra slim 2.5"drive, 9mm high (2 fit in std A1200)	189.95
HD3-3.2	3.2GB 1"x3.5" IDE drive for tower	109.95
HD3-4.3	4.3GB 1"x3.5" IDE drive for tower	109.95
HD3-1.72	17.2GB drive for EZPC system or IDE Flyer	249.95
HD3-LS120	Panasonic LS120 Floppy/Optical 1.4/120MB	79.95
HD3-LS120-CT3	3-pack of 120MB (nominal) LS120 carts	29.95
HD3-ZIP-CT1	Single 100MB (nominal) Zip cartridge	14.95
HD3-ZIP-CT3	3-Pack of 100MB (nominal) Zip cartridges	29.95
HD3-ZIP-IDE	Bare ATAPI/IDE Zip drive internal	79.95
CAB44-CD-13C	44way (2.5" HD) cable purchased with CD/HD 13cm	6.00
CASE-ZIP	Metal slim case-FDD/IDEZip/SyQuest/LS120	9.95
CASE-HD-ECON	External 3.5" HD case no psu	19.95
CASE-HD-REM	Removable drive case for 3.5" HD (metal) no psu	24.95

Keyboards, Mice, PSU's, Printers, Misc. Hardware

FAN-60MM	Cooling fan for A1200 60x60x25mm 5/12v	14.95
FAN-LP	CPU cooling fan for towered A1200 accelerators 12v	9.95
KBD-IR	KBPlus Infrared keyboard (PC output)	39.95
KBD-1R/A	KBPlus Infrared keyboard with EZKey SE/P Interface	59.95
KBD-A1200	Replacement A1200 k/b w/ribbon cable	24.95
KBD-A4000	A4000 keyboard with 5-pin mini-DIN plug	34.95
KBD-WIN95	Windows 95 keyboard with 5-pin AT DIN plug	12.95
MOU-WHI	Amiga Mouse	6.95
PRT-B&W-FUJ	Fujitsu portable thermal printer w/ribbon & PSU	49.95
PRT-B&W-FUJ-RIB	Replacement thermal transfer ribbon for PRT-B&W-FUJ	4.95
PRT-B&W-FUJ-BAT	NICD rechargeable battery for PRT-B&W-FUJ	14.95
PRT-B&W-FUJ-PPR	100ft x 8.5" Thermal paper for PRT-B&W-FUJ	4.95
PSU-100	100w PSU for Amiga (fit your old lead w/instrns,connect's)	29.95
PSU-200	200w PSU for Amiga (fit your old lead w/instrns,connect's)	39.95
PSU-230	200/250w replacement PSU for MT/DT/FT	29.95
PSU-A1200	A1200 23W PSU (original) 90 days warranty	19.95
SPK-60W-INT	5.25" Bay Internal mounting 60W PMPO speakers/amp	24.95
SPK-240W	240W PMPO speakers w/ PSU 3.5mm jack, AC mains PSU	24.95
SPK-600W	600W PMPO AC/mains spkrs w/ subwoofer	49.95

Accelerators: PowerPC with 680x0 Co-processor

ADPT-VGA-BV8M-SP	BVision 8MB A1200 gfx card pur w/ PPC acc	139.95
ACC-PPC-16-4025	Bliz'd PPC603/160MHz+040/25/FPU/ no SCSI	199.95
ACC-PPC-16-6050	Bliz'd PPC603/160MHz+060/50/FPU no SCSI	479.95
ACC-PPC-24-4025	Bliz'd PPC603/240MHz+040/25/FPU no SCSI	319.95
ACC-PPC-24-6050	Bliz'd PPC603/240MHz+060/50/FPU no SCSI	549.95
ACC-PPC-16S-4025	Bliz'd PPC603/160MHz+040/25/FPU/SCSI-2	259.95
ACC-PPC-16S-6050	Bliz'd PPC603/160MHz+060/50/FPU/SCSI-2	539.95
ACC-PPC-24S-4025	Bliz'd PPC603/240MHz+040/25/FPU/SCSI-2	379.95
ACC-PPC-20S-6050	Bliz'rd PPC603/200MHz+060/50/FPU/SCSI-2	549.95
ACC-PPC-24S-6050	Bliz'rd PPC603/240MHz+060/50/FPU/SCSI-2	609.95
ADPT-PWFD-5P	2nd A1200 m/bd powerfeed for PPC acc : PSU to 5p plug	19.95
ADPT-PWFD-FD	2nd A1200 m/bd powerfeed for PPC acc : PSU to FDD hdr	14.95
ADPT-PWFD-PPC	2nd A1200 m/bd powerfeed for PPC acc : PSU to PPC fan	14.95

Accelerators: Apollo 680xx

ACC-060-75LC	Apollo '060 MMU 75MHz A1200 acc (lim avail)	264.95
ACC-060-66	Apollo '060 MMU/FPU 66MHz A1200 acc (lim avail)	349.95
ACC-060-50	Apollo '060 MMU/FPU 50MHz A1200 acc (lim avail)	264.95
ACC-040-40	Apollo '040 MMU/FPU 40MHz A1200 accel	184.95
ACC-040-40-SE	Apollo '040 MMU/FPU 40MHz A1200 accel (20% o/c)	164.95
ACC-040-28	Apollo '040 MMU/FPU 28MHz A1200 accel	124.95
ACC-030-40-1S	Apollo '030 MMU/FPU 40MHz A1200 accel 1 simm skt	59.95
ACC-030-40-2S	Apollo '030 MMU/FPU 40MHz 2 simm skt	69.95
ACC-4/60-SSKT	Apollo 1230/40/60 2nd simm socket & fitting	20.00

Memory: Simms, Zip RAM, FPU's-Please ring for latest prices

MEM-32MB-72P	72 pin 32MB 32 bit simm 60ns for Amiga (+£10 for 1-sided)	79.95
MEM-16MB-72P	72 pin 16MB 32 bit simm 60ns for Amiga	44.95
MEM-8MB-72P	72 pin 8MB 32 bit simm 60ns for Amiga	24.95
MEM-4MB-72P	72 pin 4MB 32 bit simm 70ns	14.95

WB Disks, Kickstart ROMS, Manuals etc

SYS-WB30-DSK	Amiga WB3.0 disksx5 + Eyetech HD install	9.95
SYS-WB31-DSK	Amiga Workbench 3.1 disks x6 (w/ HD inst)	14.95
SYS-KS31-ROM	A1200 Kickstart 3.1 ROM chips (2 chips)	29.95
SYS-KS31-SET	A1200 K/s 3.1 ROMs & WB3.1 dskx6 (no manuals)	36.95
SYS-KS31-MPUG	A1200 Mag Pk u/g 3.1ROMs,WB3.1,appln s/w, manuals	49.95

EZPC-Tower & Siamese Systems & Components

EZPC-SLE-CF1	EZPC SiSys RTG2.1entry level system	599.95
EZPC-HSE-CF1	EZPC SiSys RTG2.5 system Home Studio Edition	999.95
EZPC-DVE-CF1	EZPC SiSys RTG2.5 system Digital Video Edition	1369.95
EZPC-XLS-CF1	EZPC SiSys RTG2.5 system - ultimate Amiga expansion	1999.95
EZPC-AMP-CF1	A1200 Magic Pack/24x/3.2GB/etc EZPC-Tower upgrade	399.95
EZPC-SLE-CF1-UG	EZPC SiSys RTG2.1entry level u/g (no EZTWR/kb/adpt)	499.95
PSW-W9X/SS	Windows 9x & Lotus SmartSuite bundle	99.95
SYS-SIA-ETH	Siamese System2.5 w/PC, Amiga ethernet	189.95
SYS-SIA-R25	Siamese System software RTG v2.5	99.95
SYS-SIA-R21	Siamese serial s/w RTG v2.1 (ref'ble agnst v2.5)	19.95
SYS-TCP-MIA	Miami TCP/IP stack for Amiga (reg'n fee paid)	24.95

CD32, SX32 & Accessories

ADPT-KBD-SX32P	SX32 Pro PC k/b adapter cable 10cm	9.95
CD32-JOY	CD32/SX32 joypad	9.95
CD32-PAL	CD32 console with 18Wpsu/joypad/RF lead	149.95
SX32-MK2	SX32 Mk2 Ram/Clock/FPU expander for CD32	149.95
SX32-P40EC	SX32 Pro 030EC/40MHz Acc/Ram/Clk/FPU to 64MB	199.95
SX32-P50	SX32 Pro 030/50MHz Acc/Ram/Clk/FPU to 64MB	249.95

A1200 Magic Packs, Accessories and Upgrade Bundles

AMP-STR-FDD	A1200 Starter Magic pack FDD vers /w s/w	179.95
AMP-STR-HD2	A1200 Starter Magic pack w/170 HD, EZCD i/f, skt & s/w	248.95
AMU-STH2-CDUG	24 x CDROM upgrade for AMP-STR-HD2 w/PSU	59.95
AMU-PRO-LS120	LS120 120/1.44/0.72MB drive ug w/PRO-PK3	74.95
AMT-LE	FDD Magic Pack in EZTower	299.95
AMT-PS4	EZTower PS/4, 24xCD, 3.2, 030/40, MMU, FPU, 8mb	549.95
AMT-PS4-XLS	EZTower PS/4XLS, 3.2, 040/28, 240w speakers	669.95
AMT-SE	EZTower-SE,32x,3.2,LS120,040/28,16mb,EZVGA,15"mon,240w	999.95
AMT-SE-XLS	EZTowerSE-XLS, as AMT-SE w/17"mon,Prel12TW,CDRW,600w	1799.95

Tools, Test Equipment, Motherboards & Workshop Services

PT-MBD-1200	Replacement A1200 m/b w/VID & RST fixes (no ROMs)	129.95
FIT-EZ-MAIN	A1200 to EZ-Tower fitting - A1200 + floppy drive	30.00
FIT-EZ-XTRA	Fitting/testing per customer-supplied periph into EZtwr	7.50
ADPT-PWFD-SL	2nd A1200 m/bd powerfeed for PPC acc : PSU to soldered con	20.00
REP-AM-2B/1D4	A1200 m/b rev 2B or 1D4 manfact'g bus timing fault fix	30.00
REP-AM-PCMRST	A1200 motherboard CC_RESET manfacturing fault fix	30.00
REP-AM-VID	A1200 m/b VGA-modes video tearing manfact'g fault fix	30.00

The Right Type

Are you taking your system fonts for granted? Richard Drummond takes a fresh look at your typefaces.

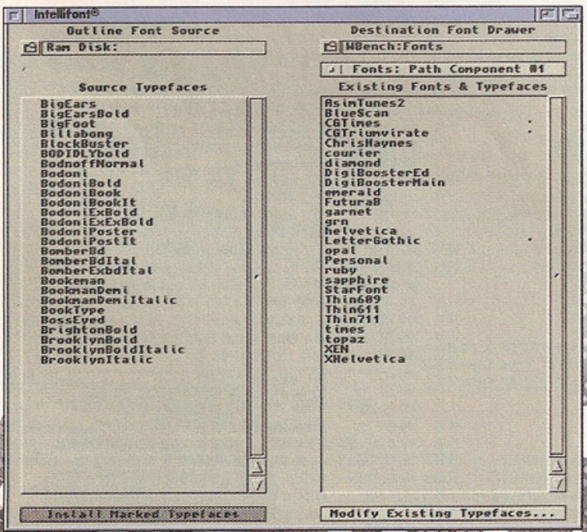
Many people believe that the Amiga is let down by poor font handling. In actual fact, AmigaOS's font support is as flexible and extendible as the rest of the operating system.

Before we discuss in detail how the Amiga deals with fonts, it's probably a good idea to make sure we're all speaking the same language and clear up some terminology (for more detailed definitions, take a look at the boxout, "Font Glossary").

A typeface is a set of consistently designed letters, numbers and symbols. Typefaces usually exist as part of a family of co-ordinated designs which are intended to be used together. For example, Arial is a typeface family which consists of regular, italic, bold and black typefaces. The terms font and typeface are sometimes used interchangeably. Strictly speaking, though, a font is a particular instance of a typeface – that is, a typeface drawn at one size, width, style, etc.

The dimensions of a font are called its metric. The standard unit of measurement in computer typography is called the point, equal to 1/72 of an inch. The height of a font is typically measured in points. The width of individual characters is usually measured in fractions of an em, where an em is defined as the horizontal space taken up by a letter 'm'.

In digital typography there are two fundamentally different kinds of font: bitmap and outline fonts.



***IntelliFont* is the tool supplied with Workbench to manage and install Compugraphic outline fonts.**

AFCD43:-In_the_Mag-/The_Right_Type — ON THIS MONTH'S CD

This month's CD contains the Type1 and TrueType scaling engines for AmigaOS, loads of handy font tools and some example fonts in various formats, courtesy of EMComputergraphic.

TYPES OF TYPE

A bitmap font consists of a series of pixel-by-pixel images – grids of dots – which define exactly how each character or glyph of the font should look. Typically, a bitmap font will be designed and created by hand separately for each point size required. Bitmap fonts are resolution dependent: a font designed to be, say, 12 points high when displayed on a screen will have to be scaled or blown-up to be displayed at 12 points at the greater resolution of the printed page. The scaling of bitmap fonts can only be achieved by changing the size of the pixels themselves, which is why bitmaps fonts look 'blocky' when used at a size or resolution other than that at which they were designed.

> "Bitmap fonts tend to look clearer at lower resolutions since they can be purpose-designed for that size."

An outline font (also called a vector, or scalable, font) consists of size-independent descriptions of how to draw the lines and curves which make up each glyph of the font. To use an outline font, whether on screen or on paper, it must first be converted to a bitmap font at the required point size and resolution, a process called rasterization. Since an outline font is described only by its shape, it may be rasterized to any size (within reason) with no loss of quality.

The advantage of bitmap fonts is their speed. Writing with a bitmap is simply a matter of pasting the pixels which make up each character to the relevant place in the output. Outline fonts must to be calculated and rendered to the desired size first. However, when a typeface is required at many different point sizes, an outline font takes up less storage space since only one description of the font is needed.

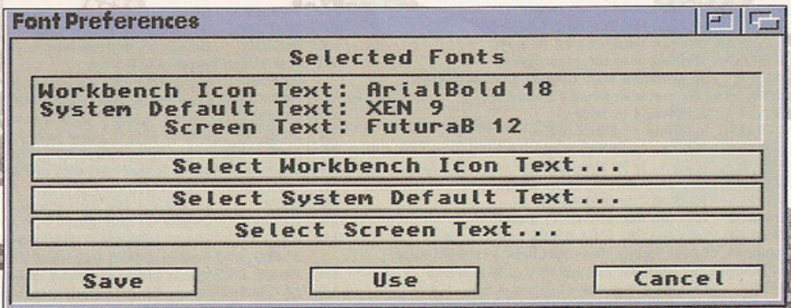
Bitmap fonts tend to look clearer at lower resolutions though, particularly on screen, since they can be purpose-designed for that size. Outline fonts can lose detail when rendered at small sizes. Many outline font formats contain additional instructions called hints, which tell the rasterizer which details to focus on in order to retain their clarity at low resolutions.

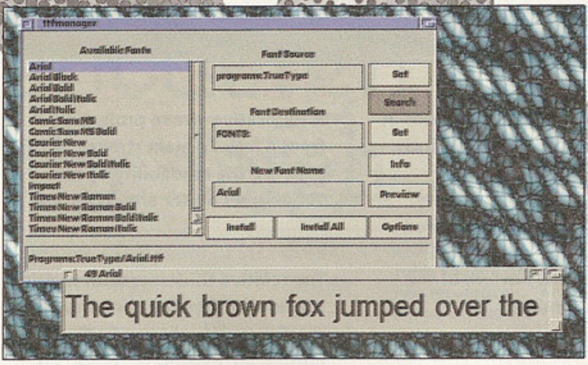
Bitmap fonts are generally stored in platform-specific formats. However, there are a number of portable outline font formats which are supported by most of the major operating systems. The main ones of interest to the Amiga are the Compugraphic, PostScript and TrueType formats.

FONTS AND THE AMIGA

Up to release 1.3 of Workbench, AmigaOS's font handling was rather spartan. It could handle only bitmap fonts, and only one of two built-in fonts, the dreaded topaz80 or topaz60, could be set as the system default. Other fonts could be loaded in from disk via a shared library, diskfont.library, but this was solely for application-specific use.

Things were vastly improved with the release of Workbench 2.0. With

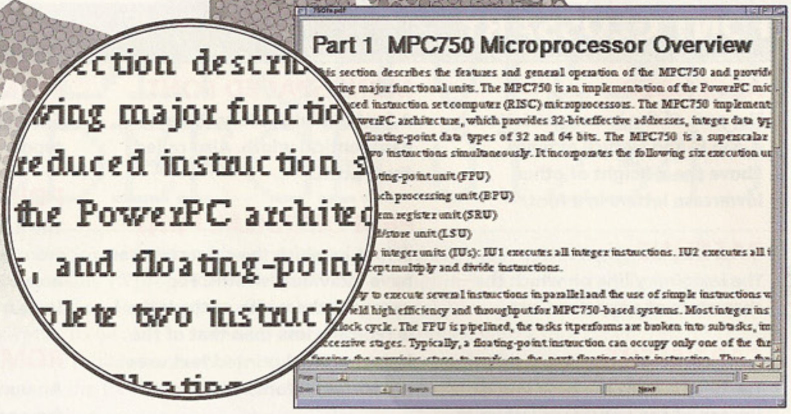


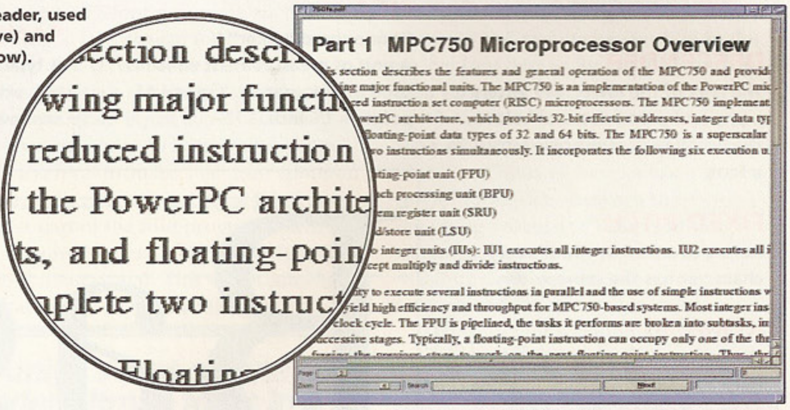


TTFManager **forms part of the** ***ttf.library*** **package, the plug-in scaling engine for** ***TrueType*** **fonts.**

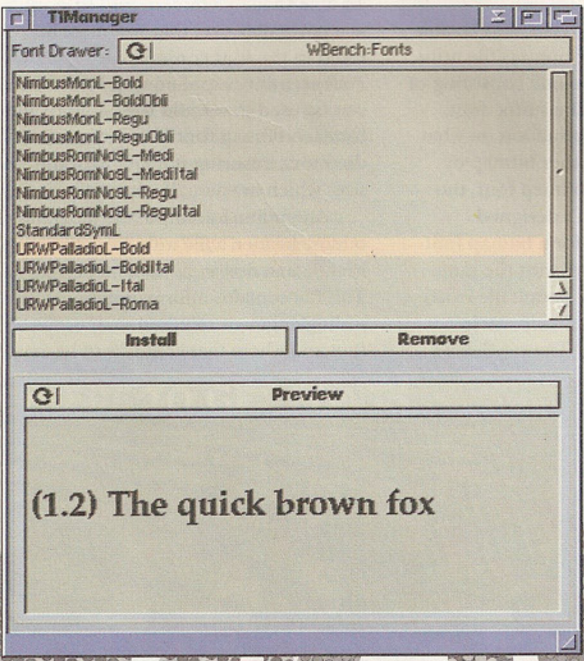
OS2.0 and above it's possible, via the system *FontPrefs* program, to set any two system fonts for application software to use by default. The first, possibly a proportional font, is called the Screen Font and is used by AmigaOS for rendering widow titles, menus, gadgets, etc; the other, which must be a monospaced font, is called the System Default Font and is used for things like console text and for fall-back purposes when an application can't handle a proportional font. Note that it's up to the particular application to adapt to whatever default fonts a user has chosen. Much badly-written software blindly expects the default font to still be topaz80, with the corrupt displays resulting when it isn't, or even overriding the users font preferences.

As from release 2.0, AmigaOS's font engine also supports the scaling of bitmap and outline fonts. The *diskfont.library* identifies a font by its name and size (the size of an Amiga bitmap fonts refers to its height in pixels, not point size). If a font is requested at a size which no design exists for, the font engine can scale the closest available size to fit. Bitmap fonts can optionally contain information saying what resolutions they were designed to be used at. The system can scale such a font so it looks correct on screens of any aspect ratio. Few fonts support this feature, though.





APDF**, the Amiga PDF reader, used with bitmap fonts (above) and outline fonts (below).**



The ***type1.library*** **ships** ***T1Manager*****, a tool to install Type1 fonts to your system fonts directory.**

Outline fonts can be used transparently in almost any place that bitmap fonts can be. The rasterization of outline fonts is handled by a plug-in scaling engine, appropriate to the particular font format, in the shape of a standard shared library. OS2.0 and above ships with a scaling engine to handle Compugraphic fonts. Other formats may be used via third-party libraries. Outline fonts can be converted to bitmaps dynamically on demand and stored in memory, or they may be rasterized and permanently stored on disk as bitmaps. The second method saves time at the expense of disk space.

The Amiga's font engine can render bitmap fonts in a number of styles, such as boldface, italics and underlined. These styles are all applied algorithmically. For example, bold text is achieved by drawing each glyph twice on the screen, the second time shifted by a small horizontal distance (called the bold smear), usually one pixel. Once converted into a bitmap font, outline fonts can similarly have software styles applied. This is usually unnecessary since these styles tend to exist as typeface designs in the outline font's family.

Conventional bitmap fonts are monochrome; the colour of text rendered with the font is selected by the application. AmigaOS also supports colour fonts, bitmap fonts which contain their own palette information. These are generally used only by graphical and desktop video software such as *PPaint* and *Scala* since no palette-remapping is performed. The application must match their screen's colours to that of the font.

GIVE A FONT A HOME

System fonts can live anywhere on your Amiga's filesystem. When a program asks the *diskfont.library* to open a font for it to use, it can optionally specify a path to that font. If no path is specified, the system will look in the drawer (or drawers) pointed to by the logical device FONTS:. The FONTS: assign is made at boot time to the drawer on your system disk called Fonts, if it exists.

Continued overleaf ➡

FONT GLOSSARY

ASCENDER
The part of the lowercase letters b, d, f, h,k, and l which extends above the x-height of other lowercase letters in a font.

BASELINE
The imaginary line on which the characters of a typeface rest.

CAP HEIGHT
The height from the base line to the top of the uppercase letters in a font.

DESCENDER
The part of the lowercase letters g, j, p,q, and y that descend below the baseline of lowercase letters in a font.

FIXED PITCH
Refers to a font in which every character has the same width.

KERNING
The adjustment of horizontal space between pairs of letters in a line of text. Kerning can make text easier to read and also more visually pleasing.

ITALIC
A slanting or script-like version of a typeface.

LEADING
(Pronounced "ledding".)
The space between the lowest descender of one line and the highest ascender of the following line of text.

MONOSPACED FONT
A font in which every character has identical width. Also called fixed pitch.

PROPORTIONAL FONT
A font in which the characters can have individual widths. For example, the width of the letter i is typically less than that of the letter m. Most printed text uses proportional fonts.

PICA
(Pronounced "piker".)
A unit of measurement which is used in typography. 1 pica = 12 points = 1/6 inch.

POINT
Smallest unit of measurement in typography. 1 point = 1/72 inch.

POINT SIZE
The height of a font measured from the top of the highest ascender to the bottom of the lowest descender.

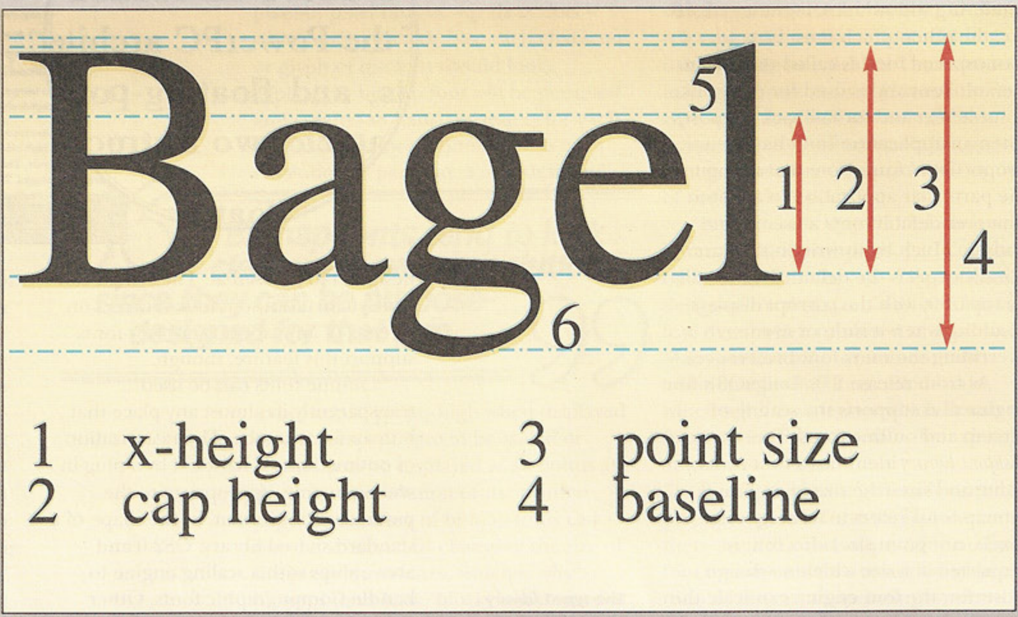
ROMAN
An upright version of a typeface (compare italic).

SANS SERIF
A typeface without serifs. The Helvetica font is an example of a sans serif typeface.

SERIF
A decorative stroke projecting from a letter's main strokes. Serifs improve the readability of text. Times and Courier are examples.

WEIGHT
The relative thickness with which the lines of typefaces in a family are drawn. Weight can be thin, light, bold, extra-bold, black, etc.

X-HEIGHT
The height of the lowercase letter x. This is used as a measure of the height of the body of lowercase letters, excluding any ascenders and descenders.



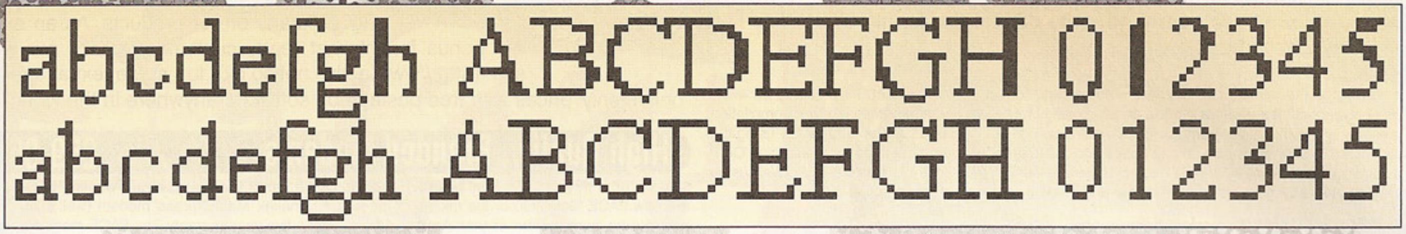
You can, of course, redirect this assign to anywhere you please, possibly during your startup-sequence. This is probably a good idea if you have a large number of fonts installed on your system: it will save over-burdening your Workbench partition.

You may even split the logical FONTS: device over multiple physical drawers by use of the Assign ADD command. The operating system and most font tools will support this. One notable exception is the ReqTools font requester which will display only those fonts located in the first branch of the FONTS: assign. The standard ASL font requester copes fine, though.

For the operating system to be able to use a font, a Font Contents file must exist for it, with a filename consisting of the font's name and the suffix .font. This file contains information on what kind of font it is, whether bitmap or outline, and, if it's a bitmap font, the point sizes at which it's designed.

The font images for a bitmap font are located in a drawer with the same name as the font. A separate file exists for each point size available, each named simply by size. These will have the letter C appended for colour fonts. To able to load a bitmap font from disk at a particular size, that size must be listed in the font contents file. The *FixFonts* utility supplied with Workbench can be used to rebuild the contents file for each bitmap font in your fonts directory, ensuring it tallies with the sizes which are actually there.

An outline font must also have an outline header, a file with the suffix .otag, in the same drawer as its contents file. This file contains information on which scaling engine is required to draw the font and where that engine is to locate



Hinting allows outline fonts to look better at low resolutions. The above shows the same text rendered in the same font (Times 12pt at screen resolution) with hinting (bottom) and without hinting (top).

the outline descriptions of the font (they don't necessarily have to live in the same place as the font header).

Installation of the different kinds of outline fonts is dependent on the particular engine used to support them. If an outline font has bitmap images created permanently at particular sizes, these will be stored in a similar way to conventional bitmap fonts.

BITE THE BULLET

Agfa Compugraphic (also known as Intellifont) fonts are the most popular kind of outline font on the Amiga, probably because they're the only kind that AmigaOS knows how to use by default. The bullet.library scaling engine, shipped with Workbench since release 2.0, handles rasterization of CG fonts.

Compugraphic fonts can be installed into the Amiga's system fonts directory with the supplied *Intellifont* utility (known as *Fountain* in OS2.0). The outline descriptions of the fonts, which are identified by the filename suffix .lib or .type, are copied into the drawer _bullet_outlines in FONTS:. *Intellifont* will create the all necessary .font and .otag files for you. *Intellifont* also allows you to create bitmap images of any Compugraphic font at any desired point size and store them on disk.

Compugraphic fonts have largely been superseded by other outline types. Their main use now is as part of the PCL5 page description language employed by Hewlett Packard's range of printers. Any original Afga fonts are now available in other formats.

POST IT

PostScript is a programming language created by Adobe Systems for describing page layouts in a device- and resolution-independent manner. It first became popular when it was implemented in Apple's laser printers in the mid '80s. *PostScript* is a highly portable format and is supported by all major operating systems. Adobe's PDF (Portable Document Format) is also based on *PostScript*.

PostScript (*PS* from now on) fonts are actually *PS* programs which are executed to draw any of the font's glyphs. To be able to use such fonts, either a full-blown *PostScript* interpreter, such as the freely-available *GhostScript*, or a scaling engine which knows how to interpret *PS* font programs, such as Adobe's *TypeManager* for the Mac and Windows, is required.

Although the basic form of a *PS* font program is just an ASCII listing of its source code, *PS* fonts actually come in a several formats. The most common format is called Type1. In a Type1 font, that part of the font program which contains the details of how to draw the font is encrypted. This was originally so that Adobe could maintain the copyrighted status of their fonts, but the encryption algorithm has since been made public. To confuse the issue still further, there are two formats of Type1 font: ASCII and binary. In the former, the encrypted part is stored with each encrypted character written as two hexadecimal ASCII digits; in the latter, each encrypted character is written as an 8-bit binary character. As you might guess, the binary format is more compact. The filenames of ASCII PS fonts typically have the suffix .pfa, while binary fonts have .pfb. It's possibly to convert between these two types quite easily and even decode Type1 fonts back to the raw font program. A suite of tools, called *T1Utils*, is provided on this issue's coverdisc to do this job.

> **"The Amiga's font engine can render bitmap fonts in a number of styles, such as boldface, italics, underlined…"**

Many Amiga applications have custom support for *PostScript* fonts, especially desktop publishing software such as *PageStream* and *Wordworth*. However, it's possible to make general system use of *PS* fonts in the same transparent manner as Compugraphic fonts. This requires a plug-in scaling engine, such as Amish S. Dave's freely available *type1.library*. The package is supplied with a tool called *Type1Manager* to handle the installation of *PS* fonts, but it recognises only binary fonts. It works in a similar way to the standard *Intellifont* utility and creates the necessary font contents and outline header files in the system font drawer for any *PS* fonts you wish to use.

Note that the font programs themselves aren't actually copied to FONTS:. This is so you can easily share the font programs between the operating system and other software which has custom *PS* font support, without requiring multiple copies of the fonts on disk.

For more information on *PostScript* fonts, visit the typography section of Adobe's website, which can be found at: http://www.adobe.com/type/

ENTER THE CLONE

The TrueType format was jointly created by Apple and Microsoft for use in their operating systems, mainly to avoid paying huge royalties to Adobe for the use of *PostScript*. Although released in 1991, TrueType didn't really take off until the release of Windows95. It now seems to be the dominant font technology, in many cases even displacing *PostScript*. Many high quality fonts are freely available from Microsoft themselves. See their site at: http://www.microsoft.com/TrueType/

TrueType fonts aren't yet popular on the Amiga. The only application that can make custom use of TT fonts is *Wordworth*. Again though, the system can use TrueType fonts with a plug-in library such as Richard Griffith's *ttf.library*. This freeware scaling engine is based on the *FreeType* portable engine (see http://www.freetype.org).

It's also supplied with a utility to install the fonts, this time called *TTFManager*. This will create the relevant font contents files in your FONTS: drawer. Again, the outlines themselves can live in a separate directory.

WHERE TO GET FONTS

Fonts in various formats are generally widely available, both commercially and for free.

A good place to start looking for free fonts is Aminet. Take a look in the drawers text/font, text/ifont and text/pfont, but fonts may be downloaded for free from hundreds of other sites. Try using a search engine with the query 'free fonts'.

Fonts are also available commercially from font foundries such as Adobe, Agfa, Bitstream, etc. They will normally charge you a fee per font.

A cheaper solution might be to look for font compilation CDs. These are available from Amiga software dealers such as:

EMCOMPUTERGRAPHIC
Web: http://www.emcomp.demon.co.uk/ Phone: +44(0)1255 431389

EPIC MARKETING
Web: http://www.epicmarketing.ltd.net/ Phone: +44(0)1793 514188

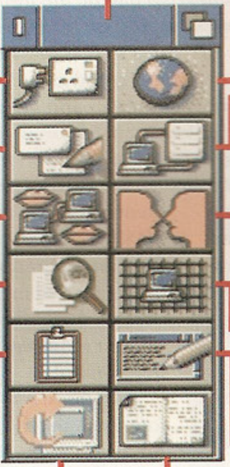
WEIRD SCIENCE
Web: http://weirdscience.co.uk/ Phone: +44(0)1162 463800

NetConnect 3 £49.95



program : netconnect
version : v3
format : cd-rom only
available : early August - call for availability
awards :

Now over a year since the release of the award-winning NetConnect 2, **NetConnect 3** will shortly be available. What is NetConnect? It is the easiest to use and most comprehensive commercial Internet compilation designed to enable any Amiga user, from novice to expert level, to get onto and use the Internet. By using the new Genesis Wizard, a user should be able to connect to the Internet in a matter of minutes. Containing Genesis, Voyager 3, Microdot-II, AmIRC 3, mFTP II, AmTelnet 2, NetInfo 2, AmChat, Contact Manager, WebVision 2 and MetalWeb 3. Ideal for both an Internet dialup and/or local area network connection.



Octopus [dock bar manager]
Octopus is a dock bar manager that allows you to have multiple dock bars on your Workbench. Launch bars from buttons, assign fastlinks to buttons, animated buttons, coloured/pattern buttons, image buttons and much more.

Genesis [tcp/ip]
The Amiga Format award-winning TCP/IP stack. A TCP/IP stack is required to connect you to the Internet. Genesis contains an easy-connection Wizard, multiple provider support, multi-user support, cost logger, 'events' control, status window, controllable dialler, DHCP support etc

Microdot-II [email/news]
A superb combined email and newsreader within one GUI! Contains all the major features you would expect - MIME attachments, support for POP3/APOP, search function, multiple signatures, multiple user support, Arexx port etc.

AmIRC 3 [irc]
Chat online with friends about topics, join conferences, organise mass meetings. The IRC is one of the most addictive elements of the Internet. AmIRC 3 is the latest version of this client!

NetInfo II [telnet]
NetInfo is a tool for analysing an (Internet) network and the people connected to it - 'finger' your friends to see if they are online, 'traceroute' a connection to monitor the speed.

Contact Manager
Central management of web sites, ftp servers, chat channels, friends/users. Full multi-user support via Genesis. Store information which is accessible from Voyager, MD-2, AmIRC, STFax, IBrowse, YAM, mFTP II and DOpus Mgn.

WebVision 2 [web cam]
WebVision is a viewer program for a fairly recent phenomenon on the World Wide Web - web cameras. Web cameras are recorded images published on the web and updated at regular intervals. They may show everything from a TV channel or somebody's living room to a weather report.

V³ [www]
The newest version of this web browser - new features include Javascript v1.2, Shockwave/Flash, improved SSL for securing ordering, new interface with 'coolbars', icons and preferences. New cache system and much more.

mFTP II [ftp]
mFTP II is a single or dual window based FTP client - download or upload to and from multiple servers, use ADT to locate the newest Aminet uploads or search for a specific file and more.

AmChat [chat]
A direct person to person or person to people chat client. Send messages, send files, chat privately or within a public forum and be notified when a friend is online.

AmTelnet 2 [net services]
Telnet into remote computers - edit files on a computer in Germany from your Amiga, maintain directories for your web pages, check the status of the network, play online games.

MetalWeb 3 [html editor]
MetalWeb is the first WYSIWYG web editor for the Amiga - create web pages in pure DTP style. Add forms, tables, images, text and even Shockwave objects or Javascript scripts. MetalWeb also allows full control over the source.

Documentation

NetConnect v3 Upgrade from v2.x £29.95
NetConnect v3 Upgrade from NetConnect v1.x £32.95
NetConnect v3 Cross-Upgrade from Miami, IBrowse, AWeb - call! £34.95

STFax 4 £34.95



program : stfax
version : v4
format : cd-rom only
available : early August - call for availability
awards :

STFax 4 is a major update to our popular fax/voice software. New features since STFax 3.8 include 'auto-warn' (warn of an incoming call, generally or specifically or warn of a received message), 'auto-reply' (send automated replies to general or specific faxes), fax filtering (filter faxes based on caller id, remote id), distinctive ring (separate different calls made to two phone numbers, via one phone line), fax forwarding (forward general or specific received faxes to a remote fax number), customised cover pages (templates), caller transfers (transfer a caller to another extension or remote number, via flash-hook transfer), IO message mode filtering, new status window, over 60 professionally recorded voice messages. Enhanced features include a re-written fax on demand system, re-written remote access, re-written mini-BBS, enhanced interface, updated preferences, phonebook and fax viewer. Lots of other minor enhancements included.

What is *STFax*? *STFax* is a commercial fax/voice message program which enables you to use your Amiga as a digital answermachine. Send and receive faxes, create a simple or advanced tree based digital answer system for family members, create a fax on demand service, log numbers via caller-ID, call screen or blacklist phone numbers, setup a mini-BBS, use your modem as a telephone, control other programs etc.

- *Full fax modem support (class 1, 2, 2.0)* - fax from your favourite Amiga software
- *Advanced voice capabilities* - use your Amiga as an advanced (or simple) digital answermachine
- *Support for the Independent Operation mode*
- *Mini-BBS* - setup your own small BBS
- *ScanQuix support* - use ScanQuix to directly scan documents from your scanner into STFax!

STFax v4 Upgrade From STFax v3.x £19.95
STFax v4 Cross-Upgrade from GPFax, TrapFax, FaxQuix - call! £24.95

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Delivery Information

S'Ware	- £1.00 for UK delivery - £3.50 for EU (recorded) - £4.00 ROW (recorded)
H'Ware	- £6 for UK next day delivery (serial cards charged at £3 for recorded delivery)

Make cheques/P.O.'s payable to Active Technologies and send to the address listed opposite. Credit/debit card payment accepted. For any additional information contact us.

Cool Summer Prices!

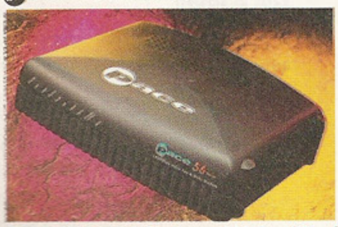


To celebrate the forthcoming launch of *NetConnect 3* and *STFax 4*, as well as some VaporWare software, we are offering limited 'cool summer pricing' on many of our products. As an extra bonus for Internet ready customers, check our web site (http://www.active.net.co.uk) for some extra special 'online only' prices with free postage on software, anywhere in the world!

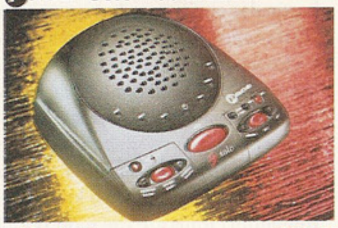
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Choose from three high-quality **branded** modems - the top of the range, award winning PACE v90, the new PACE 'Solo' v90 or the middle of the range Dynalink 'MagicXpress' modem (well built, compact design, same colour as your Amiga). All ship with a five year warranty. The PACE modem's additional features include free lifetime technical support, UK caller ID (only modem available which supports this), a superb speakerphone and volume slider/control. All PACE and Dynalink 'MagicXpress' modems are now v90 shipping ready - the agreed standard for 56K connectivity. Why not treat yourself to the brand new PACE 'Solo'? The 'Solo' be used standalone from your Amiga. Want to go on holiday but need to receive fax and voice messages, but don't want to leave your Amiga running? The 'Solo' is the answer.

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Various money saving packs are available. These are all based on the Dynalink 'MagicXpress' v90 modem. Packs based on PACE v90 or PACE 'Solo' v90 modems available at an additional cost.

Code	Pack Contents	£ Old	£ Sale
PK01	v90 Modem & STFax 4	£ 79.95	£ 74.95
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PK04	v90 Modem & NetConnect 3, Hypercom 1, STFax 4	£129.95	£119.95
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ADD £40 for a PACE v90 Modem (instead of the standard Dynalink 'MagicXpress' v90)
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High Speed Serial Cards from.. £39.95

The revamped and recently relaunched ***Hypercom*** cards offer a number of different models for the A1200, A1200-T and zorro Amiga's. The ***Hypercom 1*** is an A1200, clock port based, card offering 1 high speed serial port, the ***Hypercom 3***, another clock port based card for the A1200, offers 1 high speed serial and 1 high speed uni/bi parallel port. The new ***Hypercom 3+*** offers 2 high speed serial ports and 1 high speed uni/bi directional parallel port. The ***Hypercom 4+*** offers 4 high speed serial ports and 2 high speed uni/bi parallel ports. Note that the Hypercom 1/3 cards are now 1D4 motherboard compatible. Software drivers and English documentation supplied. Call for more information.

Model	Machine	Specifications	Price
Hypercom 1	A1200	1 x 460,800bps highspeed buffered serial port	£39.95
Hypercom 3	A1200-T	1 x 460,800bps highspeed buffered serial port, 1 x uni/bi 500k parallel port	£69.95
Hypercom 3+	Zorro-2/3	2 x 460,800bps highspeed buffered serial ports, 1 x uni/bi 500K parallel port	£49.95
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DOpus Magellan II £39.95



program : dopus magellan II
version : v5.8
format : floppy disks
available : yes
awards : amiga format gold, 95%

Directory Opus Magellan II is a complete Workbench replacement and/or file management based system. Magellan-II offers everything from file management (copy, rename, view, extract etc), dock bar creation (create your own dock bars - to launch programs, commands, scripts), advanced FTP functionality (with asynchronous operation), custom themes (24 bit icons, different backdrops, custom sounds and scripts, improved user and start menus (ala Windows start menus), greater lister functionality (with full drag and drop), custom menus and much more. Magellan-II is indispensible. Once installed and used, you will never want to go back to your 'original' Workbench ever again.

VaporWare Software

Various individual VaporWare software titles are available. These titles may be interesting to those not wanting to purchase NetConnect v3. Emailed keys or disks available:

	By Disk	By EMail
Genesis	£25.00	£25.00
Voyager 3.x - new - Javascript v1.2, Shockwave/Flash, new cache, new interface and more	£27.00	£25.00
MetalWeb 3.x - new - the first usable Amiga WYSIWYG web editor	£22.00	£20.00
AmIRC 3.x - new - latest version of the superb IRC client	£22.00	£20.00
mFTP II - new - dual or single window based FTP client	£20.00	£18.00
Octopus - new - create multiple dock bars with ease	£14.00	£12.00
Microdot-II v1.3x - integrated email and news client	£22.00	£20.00
X-Arc v1.3 - system archive management tool (handles lha, lzx and zip archives)	£17.00	£15.00
Contact Manager - system addressbook, works with many net/comms programs	£12.00	£10.00
AmTelnet 2 - new - now supports SSH and a number of other enhancements	£17.00	£15.00
Scalos v1.2a - workbench replacer with advanced features	£20.00	£18.00

- *5% Discount when 2-4 Vapor products are bought, 10% Discount for 5+*

Screen PLAY



The latest games, hints and some clever programming from you!

AF'S REVIEW POLICY

WHAT OUR REVIEW SCORES MEAN

Every month we scour the world's software houses for the latest and greatest Amiga games. We try to ensure we keep you as up to date as possible and we'll stop at nothing to bring you the best, definitive, no-nonsense reviews of the games that matter.

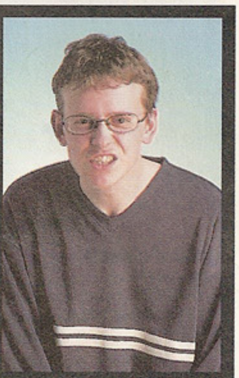
90+%	The crème de la crème. Only the very best, most playable and original games are awarded an AF Gold – the most highly prized rating there is.
80-89%	These are excellent games that could be improved ever so slightly. They are well worth your cash.
70-79%	A very good game with a few flaws. Games that get a score in this range are still good, but need work.
60-69%	Above average products which need improvement to get a better score.
50-59%	Average products get average reviews.
40-49%	Below average and needs a fair bit of work to make it worthwhile.
Under 40%	The absolute pits.

This month we've got fighting in dungeons with roleplayer *The Prophet*, fighting in gloomier dungeons in *Hexen DeathKings*, the first expansion to the *Hexen* port, and a look at some fantastic new previews, some of which involve more dungeons than others...

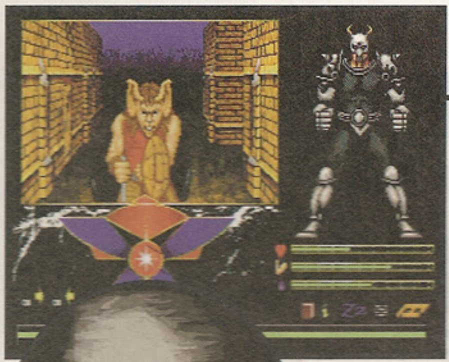
Cynics may look at the games reviewed here and say that there's a lack of imagination in Amiga games at the moment, and that they're all either rehashes of older, traditional games (erm, like *The Prophet*) or copies of PC games (I'm looking at you here, *Hexen*). However, this situation is, in part, down to you.

If you want top graphics, sound and massive games that will keep you entertained for months, expand your systems! It's simple. Look at games in the Previews section to see the fantastic games you could be playing soon – if your Amiga's up to it.

Coming next month, we'll have reviews of *T-ZerØ* and *Wasted Dreams*, which will also make pretty heavy demands on your system, but they're looking so good we're convinced they'll convince you to upgrade.



Mark Wheatley





Old style roleplaying action in The Prophet (above).





The latest games in development in Previews.



Those of you who liked Hexen will like Hexen DeathKings (above).





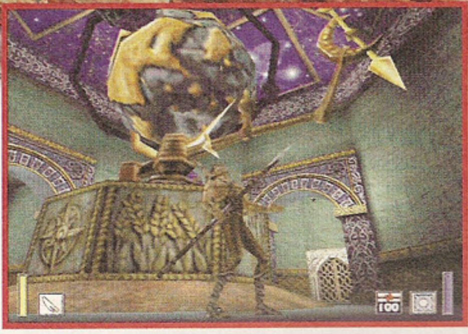
Things get very surreal in the second part of our Sixth Sense Investigations walkthrough.

Previews






Ben Vost brings you the latest news about the best games in development.



Heretic II



These pictures show how nice Heretic II looks...

Hyperion Software, the team that's led by Hans Jorg Frieden (who was responsible for many of the best free source conversions), is gearing up to bring high-end Amiga users Raven's *Heretic II*.

Based on the storyline from *Heretic* (only you're an elf called Corvus) but the game engine from *Quake II*, *Heretic II* was pretty popular on the PC and looks set to be a smash on the Amiga. Unlike many of the games based on the *Quake* engine (including the *Quake* games themselves), *Heretic II* is a third person perspective battler much like *Tomb Raider*. Critics of the game have said that this makes Corvus somewhat harder to control, but reviews have generally been favourable.

> **"Based on the storyline from Heretic but the game engine from Quake II, Heretic II was pretty popular on the PC..."**

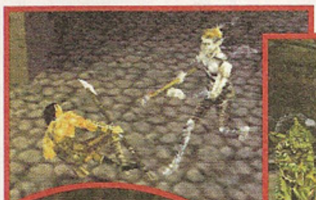
As you can see by the screenshots, the game is a graphical beauty, which also means that a standard Amiga certainly won't cut the mustard – you'll definitely require a PowerPC and a 3D graphics card. You can see more about this and Hyperion's other upcoming game, *Shogo*, at: http://www.hyperion-software.de/



...and just how much horsepower your Amiga will...

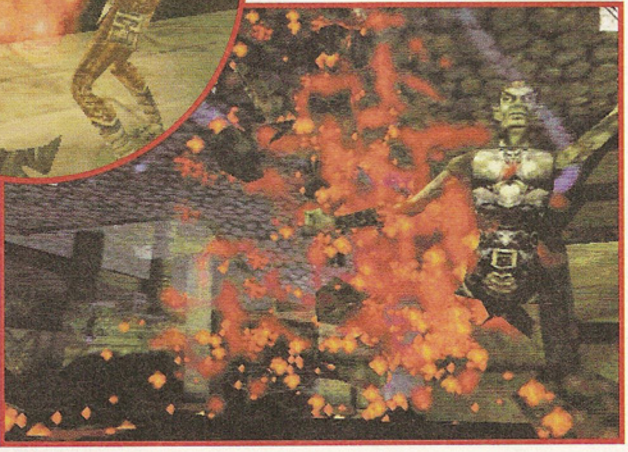



...need to do them justice. Hyperion are only planning this game for PowerPC...




based Amigas with 3D graphics cards. Time to get out that wallet again!

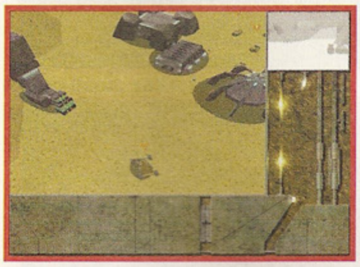


World Foundry news

World Foundry have been working on two titles for quite some time now, but things are drawing together nicely.





The first, and their oldest, title is *Explorer 2260*. We've had the *Collin's Encyclopaedia Galactica* on our CD before, quite some time ago, and it's now more complete than ever.

If this were the whole of the game to date, it would still show real dedication and imagination, but the team behind it have been really busy on the game itself too. They've finished most of the internals for the game, although things have been delayed somewhat by external development, and they've also redesigned their 3D engine and networking code to be more efficient and even possibly allow for multiplayer games on networks.

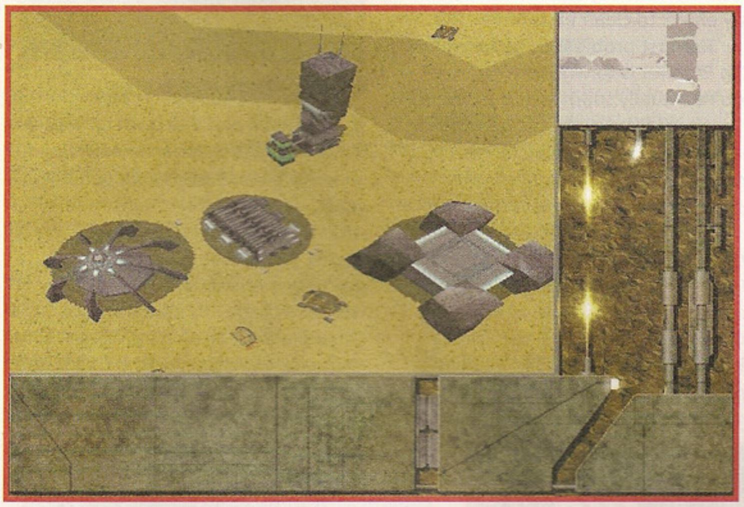
Maim and Mangle, their other title, is a *C&C*-style real-time strategy game that was actually cancelled last year but which has had development restart with a vengeance this year. Unlike the sprite-based style of *Napalm* or *Moonbases*, *M&M* is based on true 3D terrain, as the untextured screenshots show, and selected units can even show their POV in the small window located on the top-right of the screen.

Both games will almost certainly require very high-end Amigas to play them, but with games like these, *WipEout 2097* and *Heretic II* on the way, there has never been a better reason to get that PowerPC card with a graphics card to match.





In seemingly interminable development, E2260 is looking good.



3D real-time strategy games would be a new twist for the genre on the Amiga.

More on Dafel: Bloodline

Pagan Software have been hard at work making sure that their isometric 3D game *Dafel: Bloodline* is the best it can be. Although gameplay is all-important to the team, they aren't forgetting that sound and good graphics really add atmosphere, so they've come up with a sound system called Full Sensual Gaming (FSG). This maps the effects in the game to whatever action is occurring, with incidental sounds being mixed with the CD audio that accompanies the game, for a really immersive experience. The graphics, while looking simple in these pictures, are actually based on 3D game chunky to planar routines, meaning that the images don't have to be stored in chip RAM, allowing for far more complexity and variety than the 2MB will allow. You can find out more about *Dafel: Bloodline* from Pagan's website, which can be found at: http://www.pagan-games.com/

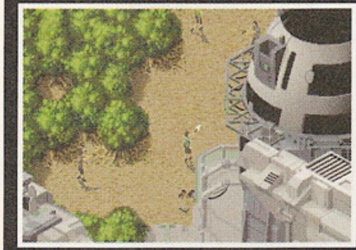


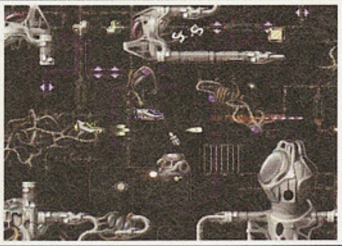


Apparently the game looks fantastic when the snow is falling. We got a nice day.

Games released

Finally, after many months of indecision, name changes, ownership changes and more, *Wasted Dreams* has been released. We'll bring you a review of this new title next issue. If you'd like to get a copy before then, trundle along to http://www.dd-ent.com for more details. Also, after a couple of delays, we're hoping that *T-zerØ* should be with us in time for review next issue too. The old skool shoot-em-up promises to look great and play even better, but time will tell...





The Prophet

Richard Drummond straps on his armour, polishes his sword and prepares to do battle with The Prophet.



This rather unfriendly-looking chap pops up to tell you that you've died.

The Prophet is a role-playing game. This genre conjures up images of pale, ill-nourished teenagers huddled over maps and tables, endlessly casting dice, but the truth is that the only common ground between computer-based RPGs and their paper-based counterparts is that you must play and develop a character. Oh yes, and a lot of fighting goes on in both.

> **"Providing you're not bleeding, diseased or poisoned, you can sleep to recover hit points and energy."**

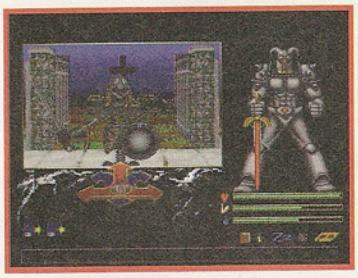
In style and gameplay, *The Prophet* is very much like that early classic, *The Bard's Tale*. It provides you with a similar static first-person perspective viewpoint and has a similar focus on exploration and combat. It develops the theme further by adding elements from games like *Dungeon Master*, particularly in the way you can manipulate objects. *The Prophet* is larger than both, however, with a claimed 200,000 locations to visit.

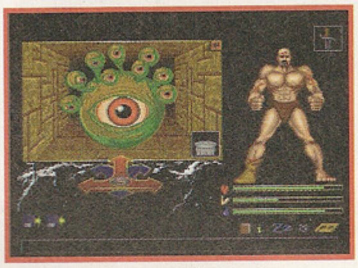
Primal City

The City of Primal is held in sway by a sinister cult led by the even more sinister Jan Linkk, aka the Prophet. Your family had just moved to the city to start a new life, but things soon went awry as your sister became seduced by the cult and your mother was killed in a fire. The game begins with you arriving at the docks of Primal City. What are you doing there? Is it to rescue your family, or have you been mysteriously summoned by the city elders to clean up the town?

The first problem to be faced in *The Prophet* is to work out what you're actually supposed to be doing. There's no fixed path through the game – the missions may be attempted in just about any order – and there are lots of places to explore.

The city forms the main play area of the game. You can wander up and down its meandering streets and visit any of its buildings. Most of these are simply houses belonging to ordinary citizens. You can pop in for a visit and maybe get some helpful advice. More interestingly, there are also pubs where





Eye, eye! What's all this then?

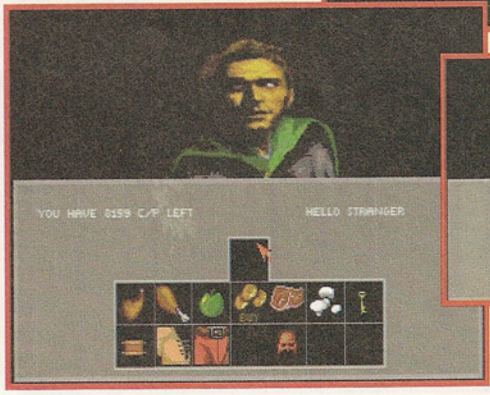
you can get a pint and catch up with the gossip, plus shops and healers. Shops come in several types: general stores, weaponries, armouries and scrolleries (where you buy magic scrolls). Healers are handy for purchasing potions and bandages, as well as getting wounds tended to. Other places of interest include the City Hall, where you can find the Guilds, the bank, the park and the temple.

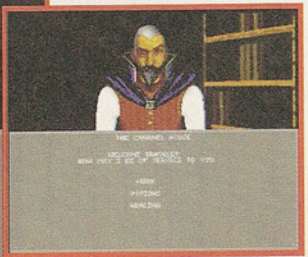
The game's various missions are



Stop by your local tavern for a refreshing cup of grog.







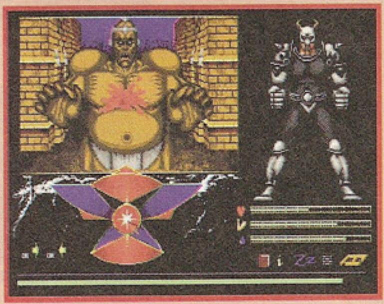
You can buy and sell goods in the shops or work to earn yourself some cash.

Combat

Fighting is one the most important aspects of the game. When you encounter one of the more antagonistic denizens of the game, the combat screen will appear. This replaces the game's on-screen compass with buttons to perform a number of moves such as hack, slash or jab. Pressing one of these with the left mouse button performs the move offensively, and with right button it's defensive. The speed with which you can hack, slash or jab is dependent on your skill as a warrior, your dexterity and strength, and the weight and type of weapon.

The key to success in combat is finding the correct rhythm of your attacks. Try not to get wounded as most of your opponents are none too hygienic and you risk catching diseases or being poisoned. Each foe will have its own particular weak spot so try to discover where that is and work on it.

In the city, monsters appear at fixed locations. When in the dungeons they appear more or less at random. This can be frustrating since you can end up spending more time fighting than moving. I would have preferred it if the monsters had their own existences and wandered about by themselves.



Jab! The Temple Guard gets one in the chest.

Bugs

The first release of *The Prophet* suffered from a number of quite serious bugs. These have been pointed out to Alive and are in the process of being corrected. An update patch will be available from their website and will feature on a future *AF* cover CD.

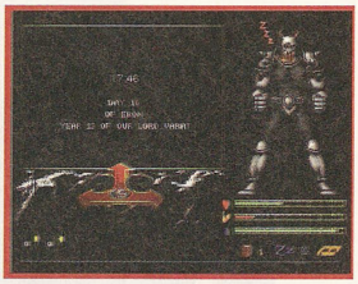
The patch will also include a number of improvements to the game and some new levels.

crucial to the plot's development and take place outside the city in "dungeon" levels, such as the cellars of a pub, the graveyard, the temple, etc. There is generally a well-defined objective for each mission, but it usually involves nothing more than yet more exploration and monster-bashing. Some of the dungeon levels feature puzzles like false walls, locked doors, teleporters, force fields and so on. While these add some extra depth to the game, they lack the ingenuity and logic of, say, *Dungeon Master*'s puzzles.

Get Into Character

The minor objectives of the game are to keep yourself healthy, fed and watered, and to earn money and experience points. Health is made up of three components: hit points, energy and nourishment. Hit points are a measure of how much damaged you've sustained, either from wounds suffered in combat or as a result of disease or poison.

Wounds must be bandaged before they can heal; diseases and poisons must be cured by a healer or by drinking the relevant potion. Head wounds must be carefully watched since they can cause you to black out. Energy is a measure of



Remember to catch up on your sleep.

your tiredness: walking and fighting take their toll. When you become exhausted you begin to slow down. Providing you're not bleeding, diseased or poisoned, you can sleep to recover hit points and energy.

Money, in the game world as in this world, is important. After all, you have to buy and keep a plentiful supply of food, water, bandages and potions to keep your health in tip-top condition. You can earn funds in various ways – you can sell the spoils of your victories in combat or you can do some honest work as a shop assistant or barman.

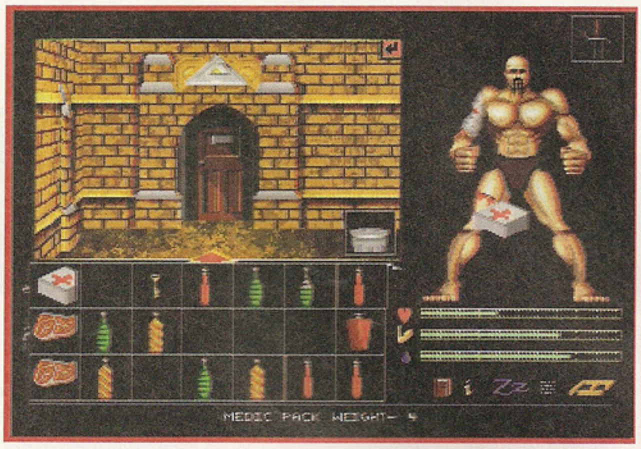
Experience points are awarded after combat and for completing any of the various missions. Your character's level is increased when you reach certain thresholds in the amount of experience.

When you gain a level, some of your character statistics will increase and you're awarded level points. Level points may be spent at one of the Guilds to acquire skills. For example, the Warriors' Guild will increase your prowess with weapons, the Thieves' Guild improve your dexterity and perception, and so on.

The Game

The Prophet is an atmospheric game. The moody, hand-drawn graphics and eerie soundtrack really help to draw you into the plot. The graphics and gameplay are rather repetitive, but once you you get into the game, the desire to advance your character and see what lies behind the next corner becomes very powerful.

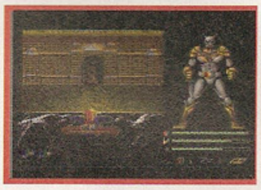
I believe the designers haven't pitched the levels of difficulty and realism quite right, though. When you start the game, it's incredibly easy to die. In fact, it's probably a good idea to save

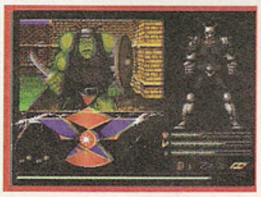


every time you're about to have a fight. However, later on the fighting becomes tediously easy and just gets in the way. Similarly, some aspects of the game, such as the bandaging of wounds and head wounds causing unconsciousness, are perhaps too realistic, yet others, like the way the monsters appear at random, are far too simplistic.

Finally, my one major gripe with the game is that it was written in *AMOS*. As a result, it won't multitask at all and will only run in a custom 15kHz screenmode.

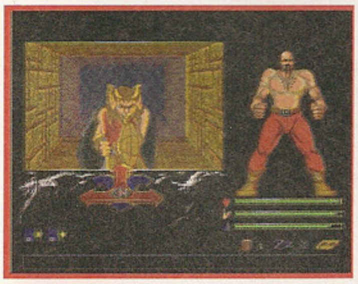
Despite its faults, I do like *The Prophet*. The gameplay is incredibly nostalgic and it's big enough to keep you occupied for weeks. I can't help feeling that another couple of months' work could have made it a real winner, though.

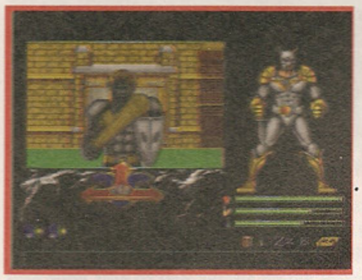




This ugly fella is an Orc. Don't worry, he's none too bright and not too quick.

> **"The Prophet is an atmospheric game. The moody, hand-drawn graphics and eerie soundtrack really help to draw you in..."**





AVAILABLE FROM: Alive Mediasoft 01623 467579

REQUIRES: Any Amiga, 2MB RAM, 30MB hard disk space

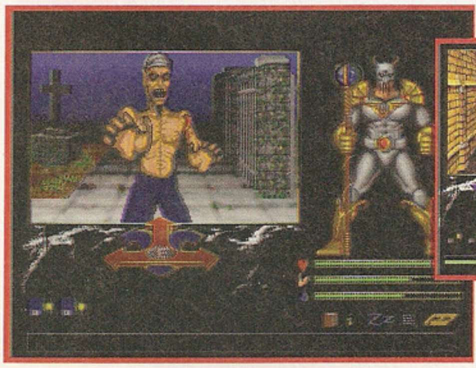
PRICE: £19.99

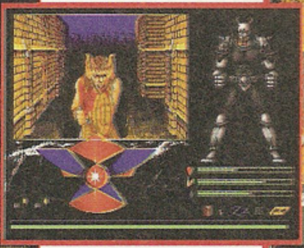
Pros and Cons

- + Atmospheric.
- + Runs on any Amiga.
- – Not system friendly.
- – Not enough variety in gameplay.

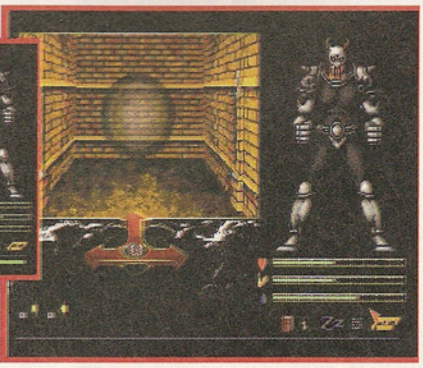
OVERALL VERDICT: A classic role-player that looks and sounds great but is let down by some fundamental flaws.

79%





Right: A teleport is an extremely handy way to get around the city.



Hexen Death Kings

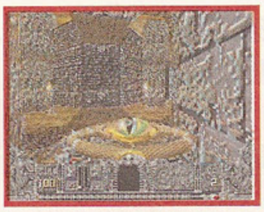
An add-on for a game doesn't often merit a page of AF, but Ben Vost reckons this is something special.





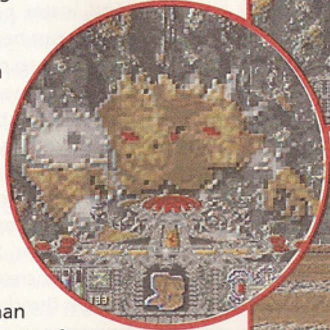
When we started playing *Hexen* in the office, we unanimously decided that it was far more fun than *Doom*, and it really made use of the graphical engine that *Doom* is made with in a much better way. The graphics were more colourful, the scenery was more imaginative and, most importantly, there were lovely little touches in the gameplay, such as the bridge collapsing in the original game, and earthquakes in this update to it.

> **Where Doom relies on you being the fastest on the draw, Hexen takes your grey matter out and gives it a good polish.**



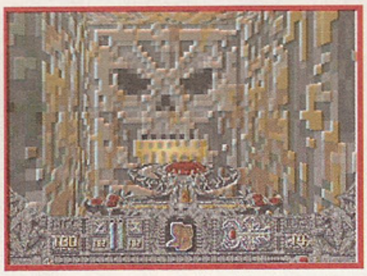
DeathKings is harder, so take advantage of any natural cover.

However, *DeathKings* is nothing more than more of the same, moreish though it may be. The bad guys are the same medley of monsters that the original game threw at you, and the pick-ups are the same too, although there are more of them. In any case, if you enjoyed the first title, I see no reason why you won't be enthralled with this new set of levels, as long as you don't mind the repetition of it. I guess in a way these ports of free source code are somewhat degraded on the Amiga – the secret codes and hints are so widely available these days that it's too easy to simply bash your way through with full armour, weapons and mana, and with God mode enabled. Try this without them though, and you'll see that not only is *Hexen DeathKings* a harder game than *Doom II* is (or *Hexen*, for that matter), it's also more devious. Where *Doom* relies on you being the fastest on the draw, *Hexen* really takes your grey matter out and gives it a good polish.



Often switches will open doors you'd all but forgotten about and there's nothing like the satisfaction gained when you finally work out one of the puzzles. The only thing I'd say was that the amount of respawning that goes on could have been reduced somewhat without detriment to the gameplay, since you end up wasting a lot of "ammo" by having to kill monsters that have popped up to replace dead 'uns, because you're still not sure where to find that silver key.

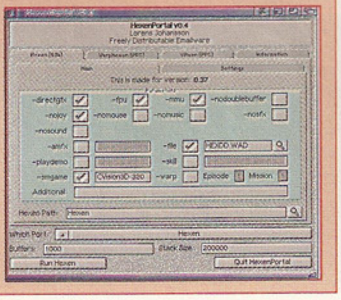
All in all, I think you should get *DeathKings*, especially if you enjoyed *Hexen*, as long as you don't mind a slightly tougher, more-of-the-same deal. As far as I know, there isn't a demo of *DeathKings*, but getting a demo of the original *Hexen* would suffice for you to get to grips with the gameplay mechanics.



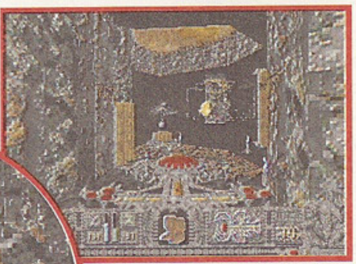
Puzzles galore await the adventurer in Hexen DeathKings.

Getting it to run

Since *Hexen DeathKings* is essentially an additional WAD file making use of the same executable, you'll either need to run it from a command line using "-file HEXDD.WAD" as one of the arguments, or get yourself a portal which allows you to edit your settings with the comfort of a *MUI* interface. *HexenPortal* is the best one I've found. It relies on *MUIRexx* to work, but both are readily available from the Aminet (and we'll have them on our CD next issue). It even allows you to change the horrible default keymap that Hexen uses. The only niggle with it is that you have to choose your screenmode every time with the version I was using (*HexenPortal 0.4, Hexen 0.45*), but I'm sure this will be resolved in time.



Easy peasy lemon squeezy with the HexenPortal.







As you can see, DeathKings is just as colourful and inventive as Hexen.

SUPPLIED BY: Alive Mediasoft (01623) 467579
REQUIRES: Hard drive, CD-ROM drive, fast Amiga
PRICE: £9.99

Pros and Cons

- \+ Even harder this time.
- \+ Cheaper too.
- \+ Same great gameplay as Hexen.
- − Same great gameplay as Hexen.

OVERALL VERDICT: Hexen DeathKings is a worthy purchase, although it might be a bit confusing for beginners to the genre.

85%

GAMEBUSTERS!

Sixth Sense Investigations

FULL SOLUTION

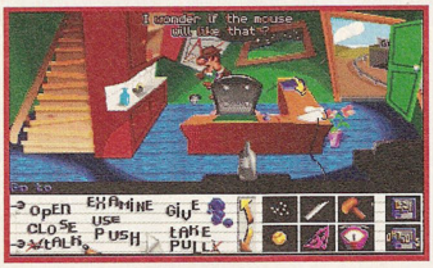


PART 2

Welcome to the second part of our Sixth Sense Investigations walkthrough. Last issue we concluded with Ben in Robopoly, who'd just managed to get a message to Frank, so let's continue...



Whenever you find something suspicious, Doc is the person to talk to.



Catch the mouse (above) in order to get rid of the cat and distract Mrs. Goldenhouer (right).



You're now in control of Frank again, on the map screen. Go to Toys n Us and use the Analyzer. Now go back to the map and enter the laboratory. Give the Analyzer to Doc, who'll find out that the Marching In garage is actually an interdimensional gateway. Go back to the map and head for the Sixth Sense bureau. Use the cheese crumbs with the mouse hole and then use the glass with the mouse. This will trap it, but in order to pick it up you'll need to use the beermat with the mouse in the glass.

Go back to the map screen and go to the Goldenhouers' villa. When you enter, you'll start talking to Mrs. Goldenhouer. Say you're terribly sorry and keep apologising. When you've persuaded Mrs. Goldenhouer that you'll make it up to Candy the cat, use the tennis ball with the suit of armour (the one on the right, holding the tennis racket). Examine the armour and you'll find a button behind it which will make the armour hit the ball onto Candy's head. Now use the mouse in the glass with Candy.

> Doc realises he hasn't given you **the right code** for the doorway – he's given you his girlfriend's phone number...

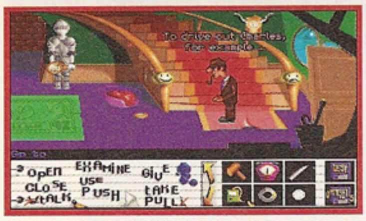




A novel use for hot cheese (above) – it helps fix the punctured tyre.



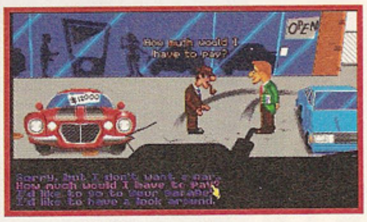
Get rid of Mrs. Goldenhouer by the cunning use of a mouse in a glass.



Different dimensions

When Mrs. Goldenhouer is out of the way, go to Charles's room. After you've talked to him, go to the map and head for the garage. Take the air pump and the flat tyre, go back to the map and then to American Cheesers. Used the flat tyre with the hot cheese to fix the puncture, then pump the tyre up by using it with the air pump. The hubcap will fall off and the tyre will be fixed.

Go back to the map and go to the Goldenhouers' villa. Use the hammer with the hubcap and Charles will leave to find out what the noise is. Go to his room and take the console, leave and go to the laboratory. Give the console to Doc,



You need to buy a car before you can set up the Interdimensional Gateway.






The hidden club, below the statue (left and below). Frick, the leader, is playing pool and won't talk to you.



Glen's Glasses store. While he's looking at the specs, pinch the book.

who will ask for time to examine it. Now go back to the Garage and try to enter it at the far left hand side.

Reginald will turn up and you should buy a car from him. Go back to the garage entrance and when Reginald appears again, tell him that you have some problems with the car. When he leaves, sneak into the garage workshop and use the Interkey. An interdimensional doorway will appear which you should go through. The scene then cuts to the Doc, who realises that he hasn't given you the right code for the doorway – he's given you his girlfriend's phone number...





The Interdimensional Gateway (top), Market Street (middle) and the City (above).

Toon World

You'll find yourself stuck in Toon World. Follow the path to the right and you'll come to customs. Talk to Curt, the customs officer, and basically just tell him everything you can. He'll eventually let you through, so you should now head for Market Street. Take the note from the door on the left, which is the door to Sixth Sense Investigations. You should also take the note which is on the floor on the right. Examine the note, which tells you about a secret entrance to the unemployed hideout in the market place. Now go to the city.

After a long conversation with the local policeman, use the bell on the far right of the location. This will prompt the statue to talk. It'll ask you some very tricky questions, but whatever you say will lead to it allowing you to enter the secret hideout. Go to the far right of the hideout and take the spraycan you find on the floor. Talk to Frick, who's playing pool. He won't respond, but you need to do this before you talk to Mr. Peanuts, who's stood next to the bunk bed.



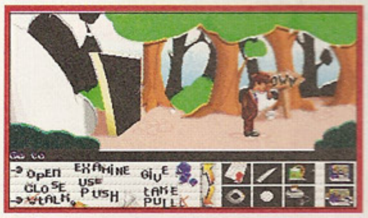
Talk to Mr. Peanuts. After a while, ask him if he has everything he needs from life, and he'll tell you he misses a record he'd like to hear. Now ask him about Sixth Sense Investigations. When you get the chance, say, "You mentioned a record...". He'll then elaborate and tell you about Brad, the rocker. Return to the city and go to Market Street. Go to Glen's Glasses shop. Use the spraycan with the glasses and then subtly take the account book while Glen worries over the specs.

Go to the city and give the account book to Henry the policeman, who's hiding in the tree. He'll go and arrest Glen for being unemployed, so go to the store and take the sunglasses (the glasses you sprayed). Go to the police station in the city and take the glue. Go back to Market Street and examine the postbox. Use the glue with the letter and you'll be able to retrieve it. Open the envelope and read the letter, which will tell you about the park warden's desire to have a leather jacket and sunglasses. This info will be very useful next month... AF

> "Give the account book to Henry the policeman, who's hiding in the tree. He'll go and arrest Glen for being unemployed..."



Henry is hiding in the black tree (above left), so give him Glen's account book.




The gateway (top) is one way only, so you're stuck in Toon World.




Answer the statue's questions (left) to enter the secret hideout.

SEND US YOUR TIPS!



If you've got some hints, cheats, tips or general good advice on any Amiga games – especially some of the newer ones like Napalm, Hexen, Heretic and Quake,

Also, if you've got a query about a game (and no, we don't really mind people asking about The Secret of Monkey Island, then drop us a line and we might be able to answer it in Helping Hands.

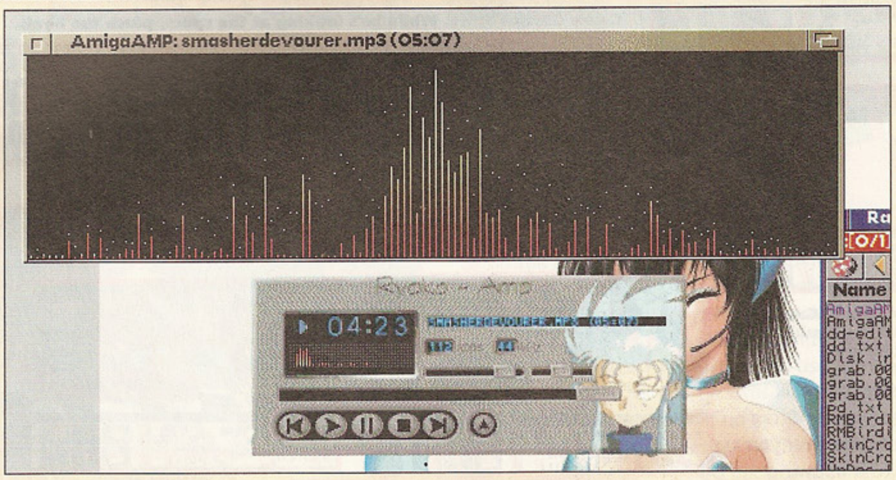
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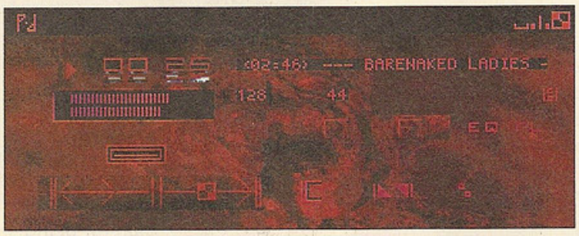


PD Select

Richard Drummond searches through Aminet and the PD postbag to find the best shareware and freeware software around.

AmigaAmp v2.6







AmigaAMP's chameleon-like ability to change its skin is great.

The Amiga has been able to play MPEG audio for quite some time now, thanks in part to Stéphane Tavernard's excellent MPEG audio library. However, MPEG audio players on the Amiga used to be either shell-based or boring to look at.

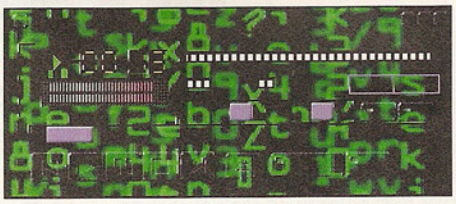
Thomas Wenzel's *AmigaAMP* was the first player of its kind to support the "skin" approach to MPEG audio players, and it's equally happy working with skins intended for PC versions of *AMP*, as well as Amiga ones. The skins mean that you can have a completely different look to your MP3 player every time you start it, if you wish.

Actually, I'd always used *SongPlayer* on the grounds that *AmigaAMP* was too unstable on my machine, but this version is more than happy multitasking away while I carry on typing these words, although that probably has something to do with the fact that I have a pretty beefy machine now. Users of lower-end Amigas can probably run *AmigaAMP* and will have to leave their machines doing nothing but decoding the MPEG stream, but then what's the point of having a multitasking computer? You'd be much better off simply slapping a CD into your drive and listening to that instead.

On the other hand, if you do have a powerful Amiga, especially one with a PowerPC, *AmigaAMP* is a vital bit of software – if you don't mind downloading 4MB song files when you want to listen to something new.

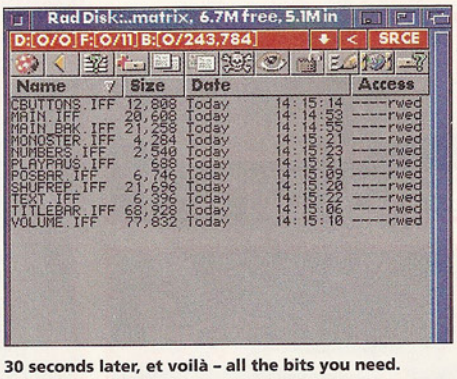
BY: Thomas Wenzel
WARE: Freeware
FROM AMINET: mus/play/AmigaAMP.lha
SIZE: 371K

SkinCrop



Well, lookie here. No sooner have I done a review of *AmigaAMP* and there's a handy script to make creating *AMP* skins easier. You'll need a copy of *ImageFX* for this to work at all, but this script takes your original picture (which has to be 275x116, a fact not explained in the skimpy documentation) and overlays it with the necessary buttons, sliders, etc, to turn it into a bona fide *AMP* skin.

The user interface for the script is easy to use and the whole operation hardly takes any time at all to perform. However, you'll still have loads of work to do, tweaking the individual elements of the new skin to make sure that the buttons are all the right colours, there's text where you want it and all the gadgets look just right. Don't think that your new skin will look anything other than bland and surprisingly hard to use if you don't do these tweaks, but being able to create the gross parts of the interface using this script really is a boon, otherwise you'd spend a great deal longer on your skins.



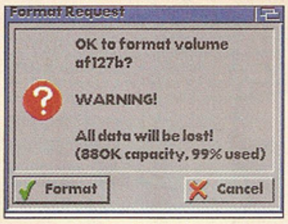
30 seconds later, et voilà – all the bits you need.

BY: Zer0-X
WARE: Free
FROM AMINET: gfx/ifx/SkinCrop08.lha
SIZE: 9k

ReqAttack V0.9

The standard AmigaOS system requesters are dull. Not only that, but the keyboard shortcuts for standard requesters aren't too intuitive either. There are have been various programs over the years for brightening up requesters and improving their input handling, the most famous of which is probably *ARQ*, but *ARQ* is now showing its age. Enter *ReqAttack*.

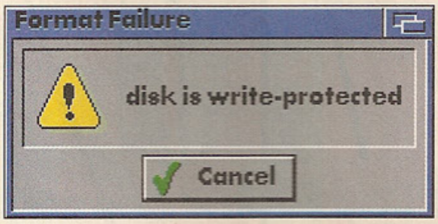




***ReqAttack* works in a similar manner to *ARQ* as it allows you allows you to put images or animations in a requester's body. It also allows more sensible shortcuts, such as Enter for the default response and ESC to cancel. Tab cycling between a requester's gadgets is also supported. Improvements over *ARQ* include the degree to which you can configure requesters, including user-definable spacing between buttons. It also supports "cool-dragging" – a requester may be moved by holding the mouse button down anywhere inside the requester, not just on the drag bar.**

The only real drawback of *ReqAttack* is in its configuration. This must be done by hand by editing the prefs file. You must define the title names of requesters that you wish to modify, followed by the attributes of the requester you'd like to change.

Since *ReqAttack* is a patch, it's of dubious reliability. Having said that, I've experienced no problems with it so far.



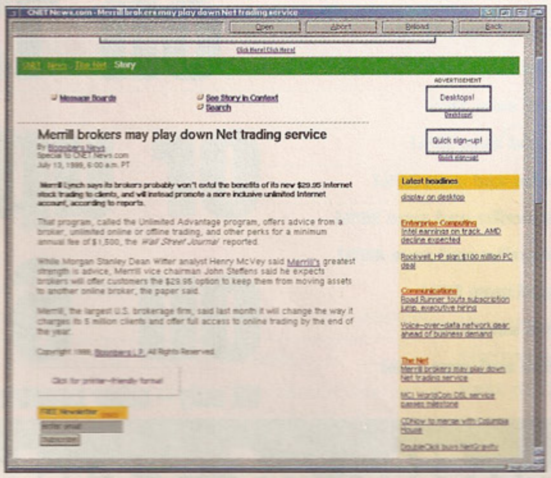
Much nicer than the standard requester, eh?

BY: George Steger
FROM AMINET: util/misc/ReqAttack.lha
SIZE: 451K

HTMLView

Beware of a slow download when you get this one, but it's really worth it for offline browsing. The version present on this web page doesn't actually have the demo you need to see it in action, but it's updated pretty regularly so you're likely to find a new version by the time you read this, and hopefully it'll have the demo you need to use it. If it doesn't, we put *HTMLView* on our *AFCD39* in a version which does have the requisite demo, so you can get it from there.

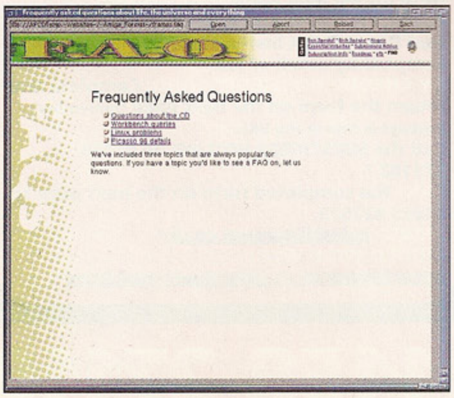
Although it's only an offline reader, Allan really shows up the browsers for the Amiga. *HTMLView* is much, much faster than any of them at image decoding, displaying accurate HTML (one of the pictures shows ClNet news in a way that no other Amiga browser can manage) and working with tables. It seems to be flawless for casual, offline use, but Allan has made sure that each version times out fairly quickly (one of the reasons he's always updating it), and you may have problems setting *MUI* prefs for anything else if the mcc for *HTMLView* has timed out.



Most Amiga browsers can't lay out this page with the text up alongside the box on the right hand side; they put it below.

In any case, *HTMLView* is ideal for browsing offline websites, such as the ones presented on our CD, because it's small, fast and doesn't even take up much hard disk space because it doesn't have an on-disk cache at all.

Allan is working on his own, online, web browser based around *HTMLView* called *iProbe*, but he's keeping very quiet about it so far. If *HTMLView* is anything to go by, it promises to be a scorcher.



BY: Allan Odgaard
WARE: beta
FROM: http://www.diku.dk/students/duff/
SIZE: 67k

Wiz 2

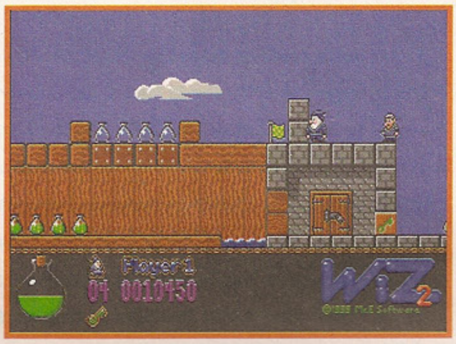


That's you with the beard and bottle of chartreuse.

Wiz 2 is a colourful, scrolling platform game in which you must play the role of WiZiO the Wizard and collect the ingredients to make your spells. It's the usual platform fare of running around platforms, picking up bonuses and avoiding the bad guys. The game features 10 levels, with the possibility of a level editor being released some time in the near future.

The graphics are sound effects are cute and the music is cheery and bouncy, but the animation is just dreadful. The response to the joystick control tends to be rather iffy too.

Nevertheless, *Wiz2* is a simple formula that works well and is competently executed. Definitely worth a look.





"Hands up!" said the guard, "Or I'll poke you with my pointy stick!" "Aiieeee!" screams Wiz.

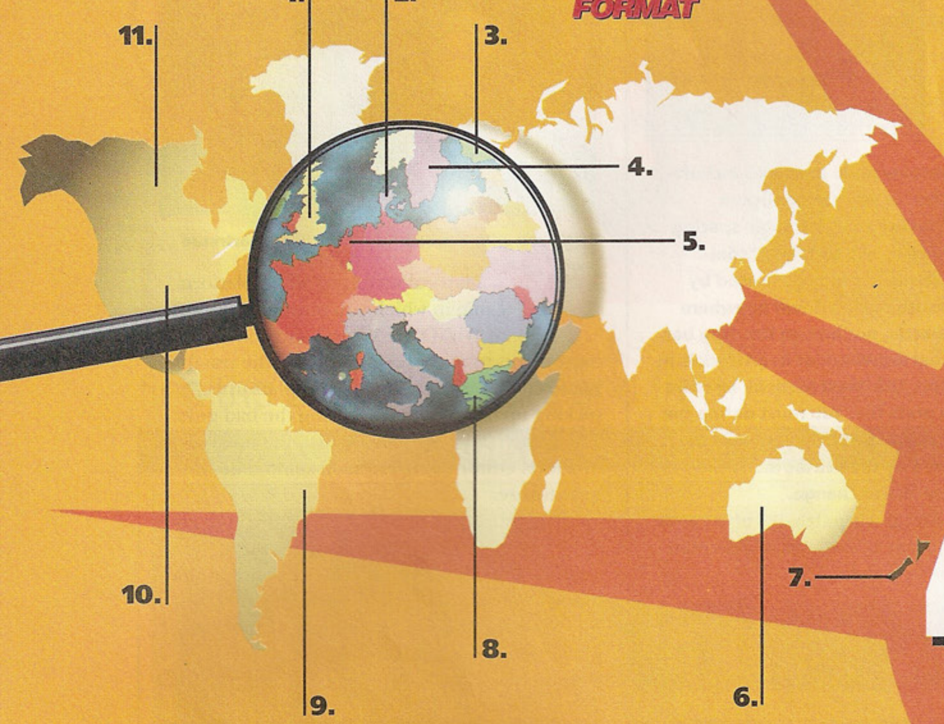
BY: Steve Eaborn
WARE: Freeware
FROM: Classic Amiga
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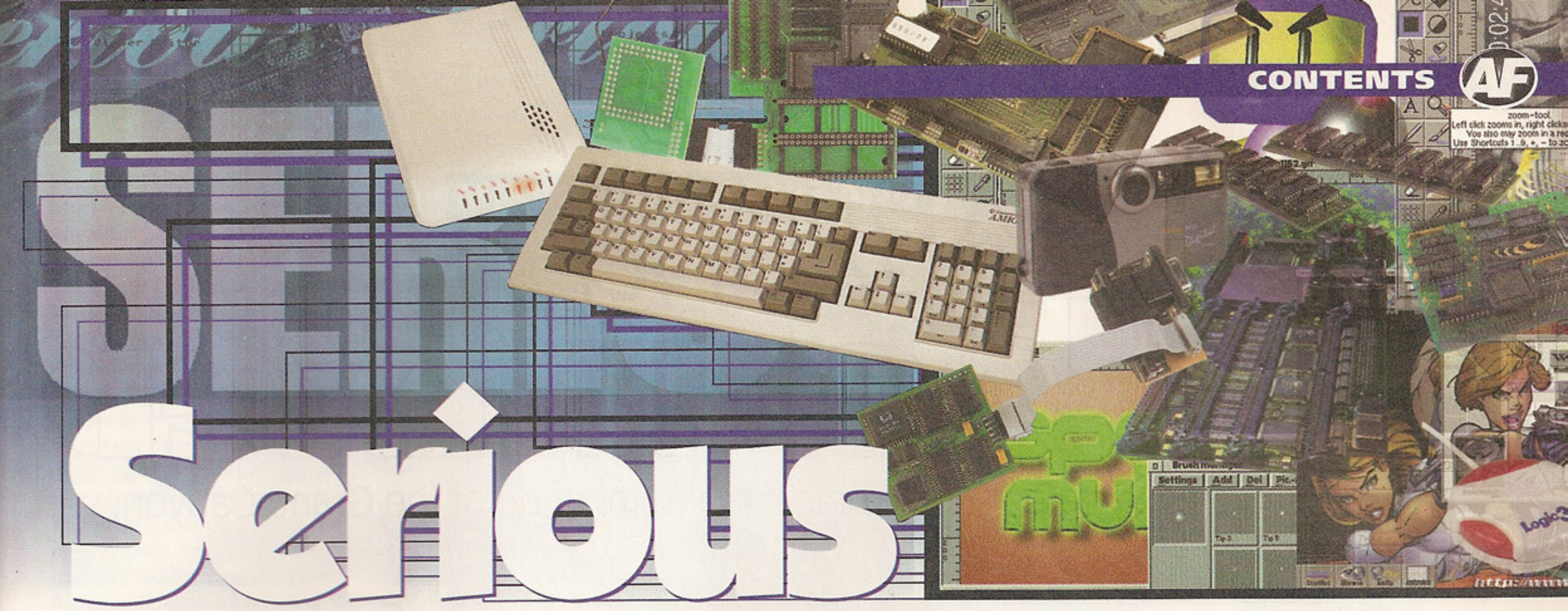
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Serious

In-depth reviews of hardware and software that you can trust.

AF'S REVIEW POLICY

...is very simple. ***Amiga Format*** is written by nearly all of the most experienced Amiga users in the world and what we say goes. OK?

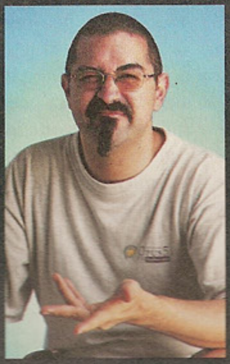
WHAT OUR REVIEW SCORES MEAN

90+%	These products are absolutely top notch. They are hard to find any fault with and that's the reason they get an ***AF Gold*** award.
80-89%	These are excellent products that could be improved ever so slightly. They are well worth your cash.
70-79%	A very good product with a few flaws. Items that get a score in this range are still good, but need work.
60-69%	Above average products which need improvement to get a better score.
50-59%	Average products get average reviews.
40-49%	Below average and needs a fair bit of work to make it worthwhile.
Under 40%	The absolute pits.

There's plenty happening in the software and hardware scene at the moment. I've got our copy of Tornado 3D now, but in order to bring you the best review possible, I've decided to carry on playing with it until next issue. However, it's probably a good job I did since there are plenty of new things queueing up to ask for the pages I would have devoted to the Tornado!

In addition to all the funky stuff we've got in this issue, you can look forward to all the new stuff that's bound to be at the World of Amiga show that's probably taking place right now, as you're reading this bit. If you're there and reading this, make sure you go around and ask about new stuff – we 'll almost certainly have it in our next issue, space willing.

The news about Amiga's seemingly sudden decision to switch from a QNX-based system for the new machine to a Linux-based one also has implications for our Serious section, with the possibility of eventually having to cover three machines – the classic Amiga, the Linux NG Amiga and the QNX-based one. We'll see how it turns out and let you know...



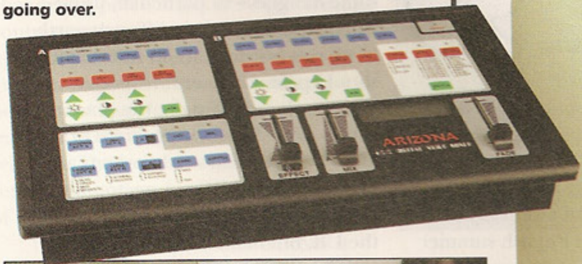
Ben Vost



"Poot, poot!" said the ship, happy that Simon was taking a picture of it.



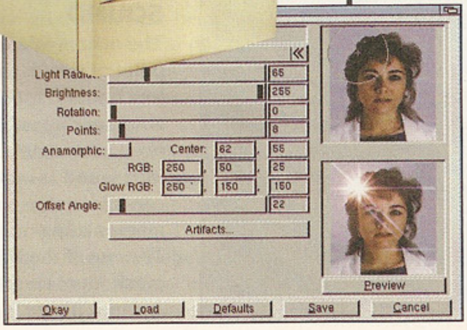
A4000-in-a-tower! It's new and it's groovy!



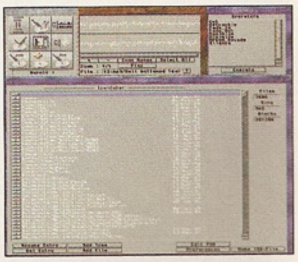
Pat McDonald gives this video mixer a thorough going over.



Gareth Murfin tells us what he thinks of his Belinea 17" monitor.



Kermit Woodall gives us the gen on new stuff in the soon-to-arrive *ImageFX 4*.



CD writing software is compared by Neil Bothwick – the man with the plan.

Arizona Video Mixer

AMIGA GOLD FORMAT

Prices drop on the coolest mixer this side of the Grand Canyon, brought to you by **Pat McDonald**.



The Arizona might be hard to get hold of, but it's well worth it if you're interested in mixing moving images.

Most people will find something appealing about this black box, mostly because it lets you smoothly mix between two or more video sources much more attractively than flicking between TV stations. Partly it's because some thought has gone into the design so it's possible to use it in the dark and on the move. It's also a very cheap video mixer available in PAL or NTSC versions. Mind you, it isn't easy to get your hands on one. As I write there's no UK distributor so you'll have to fax some credit card details to Elsat SC in Poland if you want one.

The main weakness of the hardware lies inside the case. This is fine, anodised black metal, held together with eight screws. Inside are a few web struts to keep a grip on the boards inside. These are spot welded on to the case and have a distressing habit of breaking off when the unit is dropped. Each of them has two holes so if you want to put some minute bolts or rivets in to hold them on, you can. Pity Elsat didn't.

The electronics are all on two boards, the upper of which forms the control panel. All the switches are built in so when they break you'll need a whole new board. However, all the mix controls can be bypassed by controlling the unit from your computer. A separate software bundle lets you do this via ARexx. The lower board comprises two frame buffers of RAM and a handful of Philips controller chips. A 40-pin IDC cable (as used on full size IDE hard drives) links the two boards. It all performed faultlessly for over 24 hours on a hot English summer day (27˚C) so the manufacturer spec of 35˚C is probably accurate.

> *It takes a long time to work out what the unit can do and why what you want to happen is not happening.*

SOUND

The main weakness, from a functional point of view, is that the Arizona won't touch sound with a barge pole. There's absolutely no audio capability – you'll need a separate audio mixer to play with sound as well as vision. Instead it concentrates its small size into manipulating moving video pictures. The rise of the DJ means these are much more common than video mixers. A minor niggle is that the CVBS phono connectors on the back are a bit close together if you're using adaptors on a BNC-style cable. These are just too wide to sit comfortably together. When they touch, an earth loop is set up and the picture quality suffers.

The manual is a simple but quite comprehensive affair that emphasises some dangers – in particular, using video equipment with different earth levels can overload it. An internal fuse should protect the unit from permanent damage though. Finally, the power supply unit. This is an external brick affair with two Euro-style prongs at one end and a small DC connector at the other. It's possible to use an adaptor in the UK, but be warned that this PSU isn't labelled as CE compliant.

Also, the rubber sleeving on the prongs was poorly trimmed and I had to cut it back with a knife before the adaptor would fit. Maybe it's a good idea to fit a UK plug, but if you want to be really safe and conservative, fit a CE-rated power supply. Suitable ones (15-18V centre negative at over 1 Amp peak) aren't common or cheap though.

FEATURE TOUR

Viewed from the top, the control layout is simple enough. Two video channels, A and B, can be selected and mixed

THAT QUIRKY PAINT MODE

The paint mode is the only effect that doesn't take effect instantly. It filters Channels to use only 16 colours and looks terrible if you want to retain the original image quality. Heaven knows why anyone would use it.



between. The top blue switches select which ones are active and LEDs light up when this happens. If there's no signal present at that source, the LED flashes. The Power LED is just that – it looks like a switch but doesn't do anything.

The next row of red switches is more diverse. The Black button will knock off a channel instantly and toggles to restore. The VCR button is a fuzzy logic filter. When selected, the mixer adjusts the sloppy sync on a video tape player so the picture is steadier. The price is that the picture can wobble up and down, just like flickery Amiga interlace modes. How much this happens depends on how bad the sync signal is from the video player. The Inv Lum and Inv Chrom buttons are toggles which apply to each other.

When you Luma key a primary source with a secondary source, the brightest or darkest areas of one picture are replaced by the darkest or lightest areas of the other. Chroma keying is similar, but areas of a given colour (red, green, blue or magenta) are replaced by the other channel instead. Which source is primary and which secondary is up to the user.

EFFECTS

Channel B has some special effect buttons. The Still button freezes the frame buffer, enabling a 768x288 PAL image to be downloaded to your computer. The software to do this isn't included in the price so a separate review has been included.

The Strobe button samples and holds the B Channel at a Fast, Medium or Slow rate. Eight different Sepia tones can filter primary colours. Background puts up a white, yellow, cyan, green, magenta, red, blue or black instead of channel B. The green Switch button lets you select your choice of each.

All the other green buttons let you change the percentages of brightness, contrast and saturation of each channel up or down. The feedback for this is given in the LCD display, which has a permanent back light and also always tells you which video sources are selected. The buttons with the arrows return the settings back to the default of 100% for each.

The lower group of blue buttons is used to select the basic mix type, which can be inverted by some of the red buttons mentioned above. The four on the left select which channel is Luma or Chroma keyed with the other. Note that channel A can only Chroma key on blue – if you want to key on red, green or magenta then use channel B instead. The middle two can be used to do vertical, horizontal or diagonal wipes, and nine different picture in picture (PIP) effects at quarter or ninth screen size resolution.

This sounds pretty nifty for just two buttons, but it takes a while to cycle through all the combinations with the blue Switch button. The odd Paint effect is illustrated elsewhere. Cut and Mix are used, believe it or not, to either cut or mix the channels.

HANDS ON

Finally come the slider controls. The one on the left, Effect, is sometimes active and sometimes not. It's used to alter the level of keying or mixing. Say you wanted to vertically roll down one image on another – the effect button controls how much of one image overlays the other. The Mix button is nearly always active – it controls whether channel A or B is shown, so to mix evenly it should be in the middle. The slider on the right is Fade, a master level control used to darken the output

Continued overleaf ➡

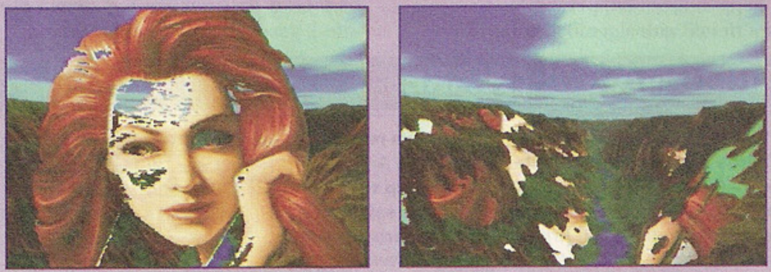
MIXING, MATCHING AND WIPING



BASE IMAGES: These two images were used, one on channel A, the other on Channel B.



LUMA KEY: Here is Luma and Inverse keying. Note how the brightness sets the levels of each image.



CHROMA KEY: Chroma keying produces different effects. It's principally used to film action on a blue screen and overlay live video onto a still background.



PICTURE IN PICTURE: There are four basic places to do PIP – two different sizes can be used though.



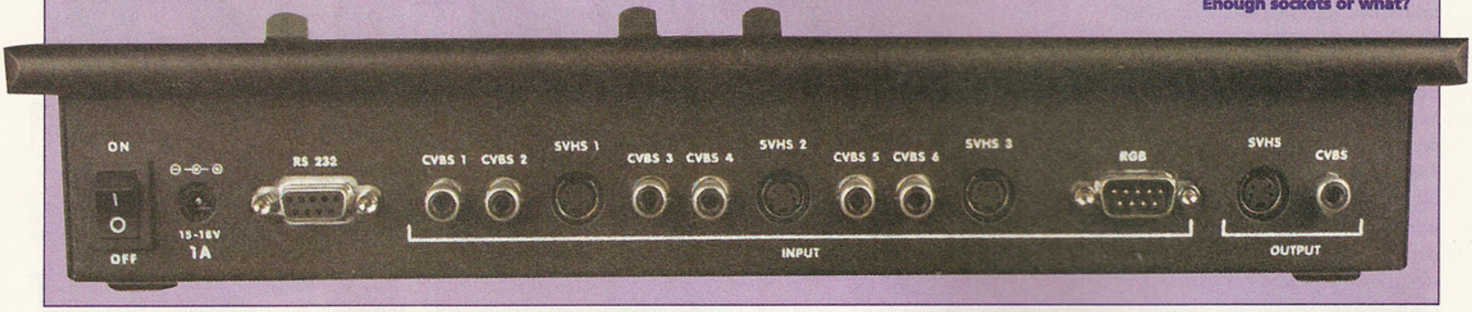
OVERLAY WIPES: Although basic, gradually overlaying one image on another is commonly used on TV and video.

PAT MCDONALD – WHO'S HE?

Our Pat, as he's affectionately called, is a true nutter. He's used PCs since 1986 but still retains a firm commitment to the Amiga, mainly because of its low cost for video. Next month we'll include a shareware demo of his on the CD, but if you can't wait to find out what he's been up to, his website is at http://www.trans- plantation.com/pat This will cost you a whole 50 US cents though...

HEADING

This is a view of the back of the Arizona. You would think up to 10 devices could be connected (one RGB from an Amiga, six CVBS phono and three SVHS) but you'd be wrong. The SVHS inputs each use two phono inputs, so if you want three SVHS sources, you can't have anything in the phono sockets. Mind you, Sony have recently dropped SVHS connectors from some of their camcorders – do they know something we don't? Note that there's both an SVHS and phono output socket. These can both be used at once.



Enough sockets or what?

to black. If you've never played with any sort of mixing device, the combinations of buttons are staggering. It takes a long time to work out what the unit can do and why what you want to happen is not happening. Experience with a genlock helps to some degree with the sliders, but it takes hours of playing around to feel comfortable with the settings, and much longer to just glance at the panel and know what's happening. Some combinations are in fact illegal and will result in a blank or corrupted display. The manual steps in though and lists all of these; at least, the ones known at the time of writing.

CONCLUSION

So is this mixer any good? Yes! Practically anybody training for a career in video and DTV enthusiasts would love a video mixer rather than a genlock, but up to now they've been frustrated with the expense and scarcity of choice. You could pay three times as much for a third-hand video mixing desk that has fewer effects, no computer interface and is four times larger. Almost no genlock would let an individual produce a TV channel. Sooner or later the computer would crash and have to be powered down, losing the power to the genlock and a brief crash to black in the video picture.

This mixer is up to that sort of job, live hands on video editing, the sort many want to play at but have no cheap tools to practice on. For the individual enthusiast, the Arizona is the first video mixer to break the £300 price mark. If you've ever wanted mix moving images, this lets you do just that. With practice and a little imagination, who knows where you could end up working?

SUPPLIER: ELSAT SC Poland, +48 22716 4306, fax +48 22716 4307
PRICE: $371 in Europe, plus sales tax

Pros and Cons

- **+ Very cheap for what it does.**
- **+ Small, uncluttered design.**
- **+ Can be used in dim lighting.**
- **– Mixed VCR images can flicker.**

OVERALL VERDICT:
Takes time to master, but the results are well worth it.

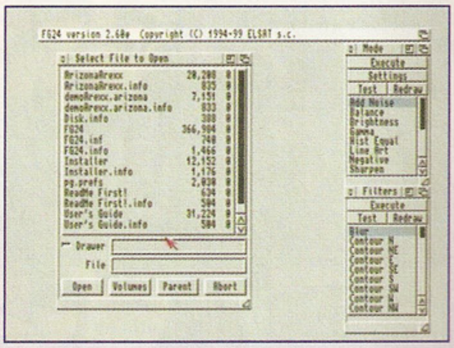
90%

ARIZONA SOFTWARE

This is a separate product so it gets its own review. There's a PC version available as well as an Amiga one – Elsat are smart not to limit ownership to one or the other. However, be warned that the software is security coded to an Arizona with a particular serial number – you can't use the same software on different mixers. The Amiga version fits onto a floppy disk and has two distinct programs. The first is an update to *FG24*, the same as used on the popular ProGrab 24 video digitiser. This has been altered to use the Amiga's serial port rather than the parallel or PCMCIA port, like the ProGrab. This is a massive leap backwards in my opinion.

Essentially, the Arizona can grab a still from a moving set of images. However, it takes a long time – minutes – to download this to an Amiga. This isn't the fault of the Arizona – the built in serial port on an Amiga is years behind the times for speed. If you want to grab a 576 pixel height image rather than a 288 pixel height one, the video signal must be paused or be a signal from a video camera pointing at an unchanging scene. I've got a third party serial port built into my Surf Squirrel, which is much faster than the built-in Amiga one. Why can't I use that? Well, because this software doesn't appear to support any third party serial ports, and there are a few of them. Perhaps the serial port on the Arizona isn't up to it. If it is, a fairly simple software fix could speed things up 5 or 10 times. If not, a lot of PC owners (who practically all have fast serial ports) will be very annoyed. The second part of the software is an ARexx server program. ARexx is a simple but powerful script programming language free with AmigaDOS. Once run, you can alter the mix and switch settings on the Arizona from your Amiga by executing a suitable script which talks to Arizona again via the serial port.

This is well within the capabilities of the slowest Amiga and opens up all sorts of possibilities for automating mixes and fades. The software works, but to be honest it could be improved. Only one sample ARexx script is supplied, which is a bit of a cop out, and the documentation is all on disk and will be confusing to novices. It's nowhere near as impressive as the Arizona itself, but hopefully Elsat will continue to update it.



If you've owned a Marcam FG24 digitiser or Elsat ProGrab 24, this should be familiar to you. The filtering effects on the right are interesting but rarely useful.



The BBC news logo captured by Arizona. Shame about the 288 vertical limit on moving pictures.

SUPPLIER: ELSAT SC Poland, +48 22716 4306, fax +48 22716 4307
PRICE: $45

Pros and Cons

- **+ It can digitise video up to a point.**
- **+ You can control Arizona via ARexx.**
- **– There's no printed manual supplied.**
- **– No support for third party serial ports.**

OVERALL VERDICT:
Too slow and should load and save images in more formats.

64%

Kodak DC200+

How Aminet software lured Simon Goodwin to Kodak.

Digital cameras have come a long way since the old fuzzy low resolution. Current 'megapixel' devices offer detail midway between MPEG 1 video and 35mm film. Plug-in Compact Flash memories mean you can delete mistakes and pay nothing for development.

Kodak's DC200+ sells for around £200 to £250 from J&R in New York, or from UK branches of Dixons. DC210+ variants cost an extra £100 for a built-in zoom, 8MB of flash memory and a carrying case.

QUALITY

These cameras use megapixel Charged Coupled Devices (windowed DRAMs) to detect light falling on a 1160x872 grid. Stored images can be in high resolution or 'VGA true colour', 640x480, which will suit Amigas without a graphics card, with three levels of image compression.

Electronics aside, the DC200+ is a fixed-focus compact camera with holes for a 37mm external lens and quarter-inch tripod. Sensitivity is equivalent to 140ASA, with exposure compensation from 25% to 400%.

A mono LCD panel above the flash indicates the resolution, flash/red-eye setting, battery, timer and free space status. A mode wheel, four-way arrows and a select button cluster around the rear display. The colour screen has adjustable brightness which is good for everything except direct sunlight. You review tiny thumbnail images across the bottom, with a bigger image above which you can extend to full-screen or zoom to quad size and scroll around.

A phono cable displays snaps on composite video monitors, like my Philips CM8833, in interlaced PAL or NTSC, using left and right buttons to flick through the pictures. They start in chunky low resolution with details decoded a couple of seconds later.

The screen can work as a live viewfinder before you take a snapshot. A tiny buzz reassures you that something's happened, an optional preview appears and an LED on the back flashes as compression takes place. A timer allows a 10 second delay, signalled by a bright front-mounted LED.

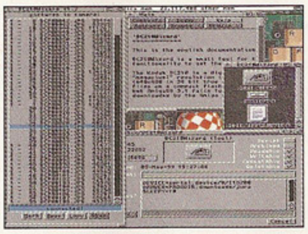
DC200+ Tech Specs



APERTURE: f/4 to f/135
AUTO SHUTTER SPEED: 3 to 500mS
FLASH RANGE: 68 to 300cms
FOCAL LENGTH EQUIVALENT: 39mm
WEIGHT: 330g + batteries



Register with Kodak for online support



Aminet's *DC210Wizard* software is simple but effective.

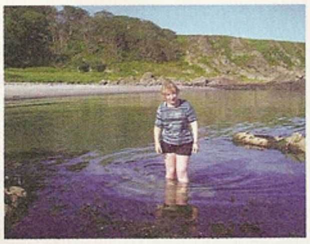
CAPACITY

There's serious processing power inside the DC200, which crunches images in 10 to 15 seconds. JPEG founders Kodak licence code to Canon and Nikon. JPEG manages 10 to 25 times compression or you'd only get one true colour megapixel image onto a 4Mb RAM card.

Compressed image sizes range from 40K to over 300K and the camera guesses how many pictures it could store at the current setting. File sizes vary with content so if there's only room for one, it may be too complex and fail to store.

You can free space by deleting individual snaps, but once a picture is taken its format inside the camera is fixed – you can't recrunch or crop it. It takes under 10 seconds to swap Compact Flash cards, which come in 4, 8 and 15MB sizes at prices from £15 upwards.

You could easily fit 50 compressed pictures on the supplied 4MB RAM card, but you'd struggle to manage that on a single set of four AA alkaline batteries. The camera demands a hefty 15W and ignored my relatively cheap 1200mA adapter. Mastercare want £69 for an adapter from 230V mains to 7.5V at 2A.



Scylla meets Charybdis (62K).

Hagley Road hardly flatters 'High Resolution Best' mode (285K).



TRANSFERS

Kodak bundle 32-bit Windoze software on CD, charging an extra ton for the optional Mac connection kit. Thankfully, Aminet's *DC210Wizard* (see the *AFCD*: Workbench/Digicam) also suits the DC200(+), listing files in the camera and their sizes, and downloading pictures. The serial cable has a 9-pin D-type plug, requiring a cheap mouse-type adapter for the Amiga motherboard port.

The camera supports baud rates from 9600 to 115200. My CyberStorm 2 fetched 4MB in about six minutes at the top rate, using serial.device unit 0. Slower Amigas need a buffered port to read at top speed. There's no handshaking so transfers are aborted if the timing slips a bit. You can set the rate, port and download drawer with icon ToolTypes.

DC210Wizard is a thousand times smaller than the Windoze bundle so it's relatively simple. It is limited though – it can't decode FlashPix format, read dates or thumbnails, or take or delete pictures. Future Amiga software could do that too, so I've enlisted Kodak developer support via their web page. Watch this space… AF

4MB COMPACT FLASH JPEG PICTURE CAPACITY

Picture Quality	Good	Better	Best
640x480x24-bit	50-80	30-50	20-30
1152x864x24-bit	25-40	20-30	10-16

Note: exact capacity depends on image complexity

CONTACT: Kodak
http://www.kodak.com
PRICE: £200-250

Pros and Cons

+ Good picture quality.
+ Support on Aminet.
- Fixed focal length.
- Gobbles batteries.

OVERALL VERDICT:
A versatile Amiga accessory.

83%

Power Tower A4000

Richard Drummond gives his cramped A4000 an impressive new home.



The stylish exterior of the new Power Tower case.

As computers go, the A4000 is no masterpiece. Okay, so the motherboard has its fair share of design flaws. I can live with that. But without doubt the worst thing about it is the case Commodore decided to house it in. Not only is it the ugliest Amiga ever produced, but it's severely lacking in storage space. The A4000 desktop case may have seemed roomy in 1993, but in today's world, where a computer is naked without at least a CD-ROM and a Zip drive, it's positively cramped.

Take the A4000 that I use here at *Amiga Format* as an example. Ignore for a moment the fact that the CD-ROM drive hangs out unsecured because the single external bay isn't long enough for it to fit in. The real problem is that it overheats when the lid is on, a cause of real anxiety whenever there's a health and safety check in the office. The only way to get a decent airflow past the tangled mass of IDE, SCSI and floppy cables which obscure the two processors is to have the machine's innards exposed to the elements.

Unfortunately, if you want a fast and expandable Amiga, until the BoXeR arrives (if it ever does), the A4000 is the best Amiga we have to work with. Thankfully, many of its shortcomings can be overcome by simply re-housing it in a tower case.

MOVING HOUSE

Over the last two years, the towering craze has swept over the A1200 owners of the world. Power Computing's contender in the tower wars was the Power Tower. Its elegance, build quality and neatness earned it an *AF* Gold award back in *AF107*. Power now intend to reprise this success with an A4000 version based on the same case.

Some of the problems faced when transferring an A4000 from a desktop to a tower case are similar to those that occur for the A1200. The case must be modified to accept the non-standard-sized motherboard, the case's back panel has to be machined to fit the ports and the power connector has to be adapted to fit the socket on the motherboard. Unlike the A1200, the A4000's keyboard presents no difficulties since it's already an external unit. Similarly, the floppy drive can be moved to a new case with no bother.

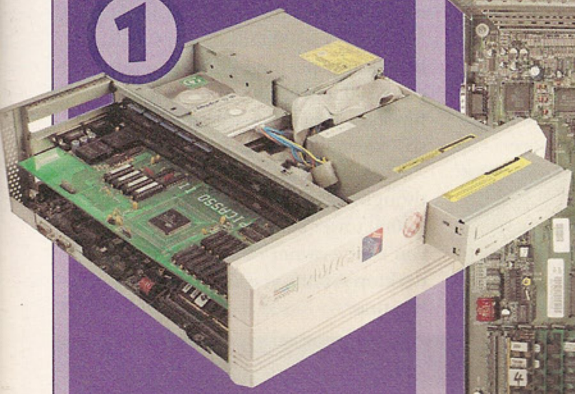
> The modifications made to the case have been accurately done and everything fits together really well.

One of the problems unique to towering an A4000 is with the Zorro slots. When the motherboard is mounted on the side panel of a tower case, the original Zorro riser faces the bottom of the tower and so any cards you may have installed will be positioned vertically. The cards aren't likely to fall out as Zorro cards tend fit tightly in their slots, but it does make them difficult to access. The other snag is the mouse ports. Since these are located on the side of the A4000's motherboard, when installed in a tower they point to the bottom of the case too.

THE POWER SOLUTION

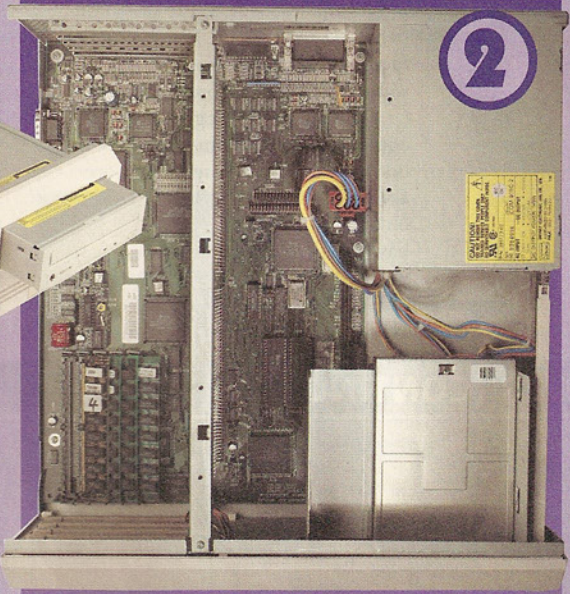
Computer cases are rarely things of beauty, but the Power Tower manages at least to look stylish: the power and disk activity LEDS are sited in fin-shaped

CONSTRUCTING THE TOWER



The starting point: one scruffy, over-stuffed A4000 desktop.

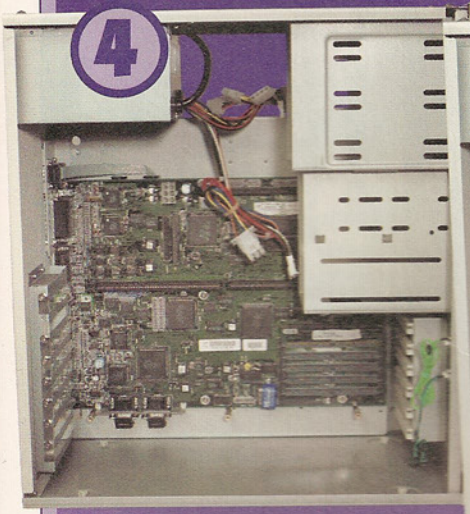
Remove any Zorro cards you may have installed, and all the SCSI, IDE and floppy cables. Disconnect the power from any hard drives, CD-ROMs, etc, and then remove the drives themselves. There should be just enough room to unplug the processor daughterboard and manoeuvre it through the space between the Zorro riser and the front drive bays.



The next job is to get the motherboard out. Undo the hexagonal nuts fastening the ports to the rear of the case. Remove the screws holding the bar across the top of the Zorro riser and take out the riser itself. Now undo the screws fixing the motherboard. There should three down either side and another three by the slot where the Zorro riser fits.



You can now mount the motherboard in the empty tower case. The rear drive bays must first be removed before it will fit. The edge of the board with the mouse ports should point towards the bottom of the case. The ports at the rear of the board should fit the cutaways at the back of the tower.



Line up the screw holes on the motherboard with the nine short brass spacers and fix the screws along either edge. The three threaded brass spacers provided should be used for the centre screw holes. Replace and tighten up all the hex posts to fix the ports to the backplane of the tower. The mouse port extension leads can now be connected up and the hard drive LED can be connected to the header labelled DISK on the motherboard.



Now you can install the new seven-slot Zorro daughterboard. Plug it into the motherboard and then screw it down to the six large spacers. The reset switch and the power LED can be connected to designated headers on the daughterboard. Connect up the power to the motherboard – it's the 6-round-pin block.



It's now time to fit your drives. Dead easy. Just make sure they're screwed in tightly and the power cables are connected firmly.

Before things start to get messy, re-install your processor daughterboard.

recesses and glow reassuringly, and the Power, Reset and Standby buttons are curiously lozenge-shaped. This last switch betrays the case's PC origins but it can be put to all manner of cunning custom uses.

The case is functional too. It has a sturdy steel chassis and the outside is coated with a durable creamy-beige finish. There's no shortage of storage space either. The tower is wider than average and sports three 5.25" and two 3.5" external access drive bays and six 3.5" internal bays. I can only really fault it on the lack of labelling for your Amiga's IO ports.

The Power Tower neatly addresses the problems inherent in rehousing an A4000 motherboard. The case has two standard mouse ports situated on the back panel, which are connected to the ports on the motherboard via extension leads. The Zorro card issue is solved by providing a new Zorro backplane which fits parallel to the motherboard. Cards can then by installed in a more normal orientation, parallel to the bottom of the case. This new Zorro daughterboard adds extra expansion capabilities, boasting seven full Zorro II/III slots, two video slots

Continued overleaf ➡

and five ISA slots. An ISA-bridgeboard, like the GoldenGate, is required to make the ISA slots usable to the Amiga.

Over the production history of the A4000, machines were shipped with floppy drives of differing sizes and shapes. Some machines have units which are slightly larger than a standard 3.5" bay. You can cover the adjacent, partly-used bay with the cut-down bezel supplied with the tower. Alternatively, Power can sell you a kit to mount the drive in a 5.25" bay.

We didn't get any instructions for the assembly of our tower (it's the first one off the production line), but it's very straightforward, as you can see in our step-by-step guide. The modifications made to the case have been accurately done. Everything fits together well; a full length Zorro card will slide in with no forcing or bending.

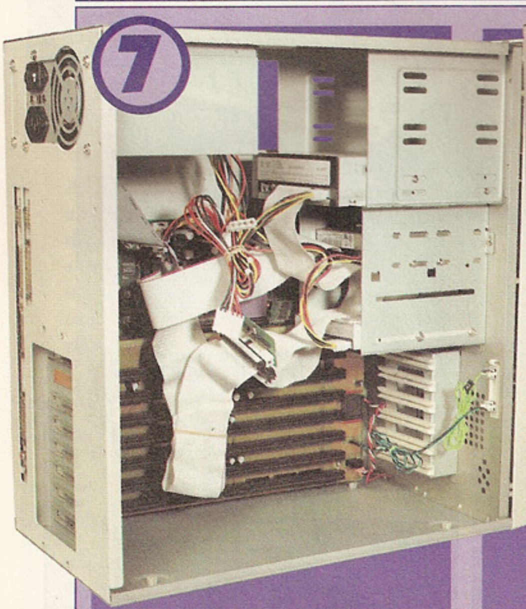
The Power Tower gives your equipment more room to breathe but, oddly, doesn't make anything more accessible. The processor card will still be difficult to get at, especially if you have drives mounted in the rear bays, and half of the motherboard, the half with the SIMM sockets, will be entirely obscured by the Zorro backplane.

VERDICT

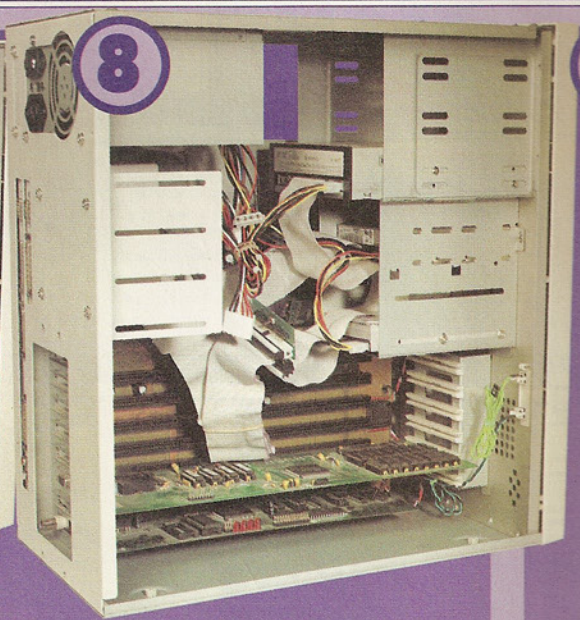
The Power Tower offers great value for money. It costs only £35 more than Atéo Concept's A4000 tower case, which doesn't have a custom Zorro backplane. MicroniK's A4000 tower ships with an identically-specified Zorro extender but costs £90 more. The MicroniK tower, however, is massive, with a staggering six external 5.25" bays.

Never mind the competition, though. The Power Tower is the best A4000 tower solution that I've seen. If you're the owner of an overflowing desktop A4000, you'd be a fool not to buy one.

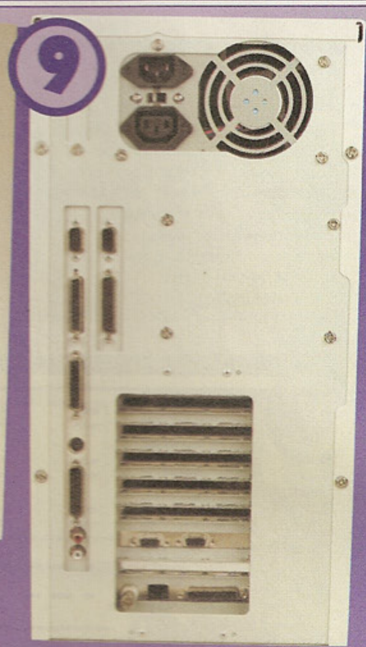
CONSTRUCTING THE TOWER (CONTINUED)



Next, connect up the data cables to any drives you have fitted. The floppy is probably the best place to start. A longer cable is provided with the tower if the original proves too short. Make sure the end that fits to the motherboard header is the right way around. Pin 1 is labelled. Do the same for your IDE drives (and SCSI, if you have them).

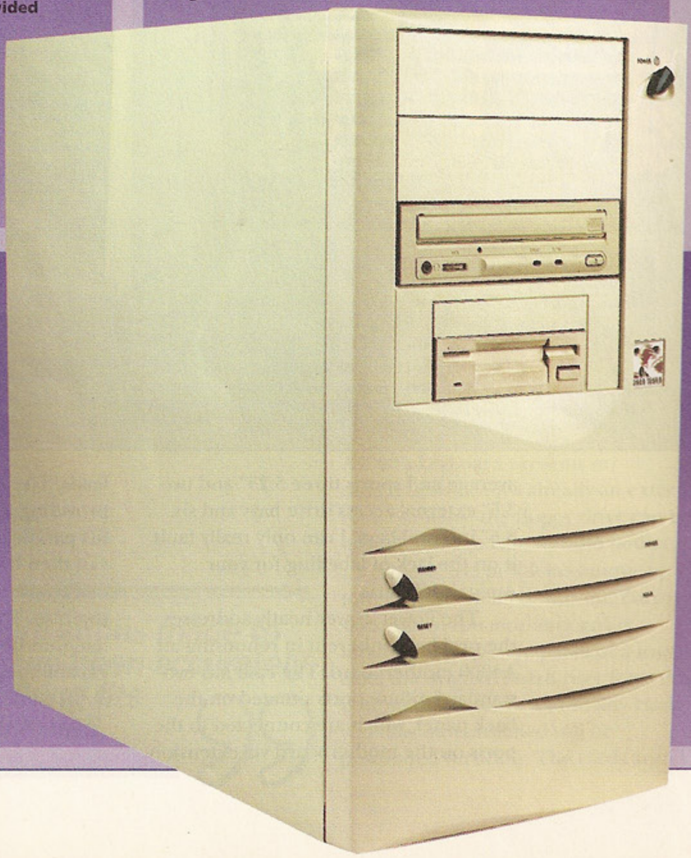


Just about finished. All that remains to do is to re-install any of your Zorro cards and replace the cover. Congratulations! You now have a towered-up A4000.



A view of the rear of the assembled tower. As you can see, the mouse ports are extended to the rear – they're the two 9-pin D-sockets at the top. The blanking plate at the top is for additional ports, like an external SCSI connector.

10



The finished product. The three 5.25" and two 3.5" external-access bays at the front give a lot more space for CD-ROMs, Zips, tape streamers and any other removable media drives.

SUPPLIER: Power Computing
PRICE: £189.95
REQUIREMENTS: An A4000 desktop machine, a screwdriver and some common sense

Pros and Cons

+ Great value for money.
+ Solid build quality.
+ Loads more storage space.
+ Two extra Zorro II/III slots.

OVERALL VERDICT:
If I owned an desktop A4000, I would buy one.

92%

Belinea 10 70 20 SVGA Digital Monitor

Reader Reviews



Gaz Murfin has given us tips on both *IRC* and *Quake* in the past.

Get the big picture with Gareth Murfin's monitor review.

A decent monitor is essential if you're serious about computer graphics, and since the Amiga is an extremely graphics-orientated machine, a good monitor should be high on any user's priority list. If you own some sort of graphics card then you're bound to want an SVGA monitor, purely because of the top notch quality and the potential to display flicker free high resolutions.

I picked up my Belinea 17" Digital SVGA monitor for around £250 from a



PC dealer and I've never looked back. The leap from my old 14" 1084S Commodore monitor was astonishing, not only because of the size difference but also because of the difference in display clarity.

The Belinea has a viewable image size of 39.6cm, and I found that nearly every last millimetre of this could be used by adjusting the screen width and height out to the extremes. Dot pitch of the screen is .28mm, but the imaging appeared pretty sharp when compared to other SVGAs I've used. The Anti-Reflection Anti-Glare (ARAG) coating on the screen minimises reflections, and even in broad daylight it's still possible to see the screen clearly.

Physically, the Belinea is very large, and I get the impression that there's a lot of wasted space inside the massive outer casing. However, it's very attractive as far as monitors go. The casing features a nice array of curved edges



Make sure you have a scandoubler or a graphics card or you won't be able to use the monitor.

which fall easily on the eye, plus a neat LED in the corner to indicate whether the monitor is on or off.

In practice, the monitor makes almost every task much better.

> "Workbench runs very nicely in 1024x768 and iBrowse runs like a dream in the same resolution with 24-bit colour."

Workbench runs very nicely in 1024x768 on my BlizzardVisionPPC and *iBrowse* runs like a dream in the same resolution with 24-bit colour. When using the web, I found that some awkward sites which previously involved scrolling to view the whole width of the page were now easily accessible and appeared much better.

The maximum resolution the Belinea can handle is 1280x1024 at 60KHz, which appears slightly flickery running through my BVisionPPC, and unfortunately the monitor doesn't even come close to supporting the BVision's maximum resolution of 1600x1200.

The Belinea also has the usual flaws of almost any SVGA monitor, such as the fact that low resolutions like 320x256 appear extremely blocky, and also that it can't display 'native' Amiga resolutions. I solved this problem simply by leaving a normal TV plugged into the Amiga's RF, just in case I ever needed it.

Possibly the most alarming flaw with this monitor is the time it takes to switch between resolutions, sometimes blacking out for up to two seconds when flicking from one screen to another. The nature of the AmigaOS and *MUI* means that you'll probably want to flick between screens quite often, and each time you do there's the possibility that the monitor will blank out for a few seconds. Unfortunately, this can really hamper the fluency of your Workbench usage.

Having said that, I still think the pros far outweigh the cons, and this monitor is a must for anyone requiring a larger than average, high quality SVGA monitor for their Amiga.

BEN SAYS

Since true multiscan monitors (the ones that can sync down to 15kHz) are as rare as that which comes out of the backsides of rocking horses, any Amiga user with a yen for something better than a 14" monitor or a TV just has to get a modern SVGA monitor, and it has to be said that they've come on in leaps and bounds over the years. Provided you have a decent graphics output (you won't get much joy straight from your 23-way video port), they're so much nicer than your 1084 or 8833 that it's hard to believe. Hopefully the next generation of Amigas will not only keep the ability to display to a TV, but will also directly support SVGA.

SUPPLIED BY: LaserTek, Newcastle
PRICE: £249.99

OVERALL VERDICT:
A great SVGA monitor with some irritating flaws.

89%

ImageFX 4 W.I.P. Codename Adrastea

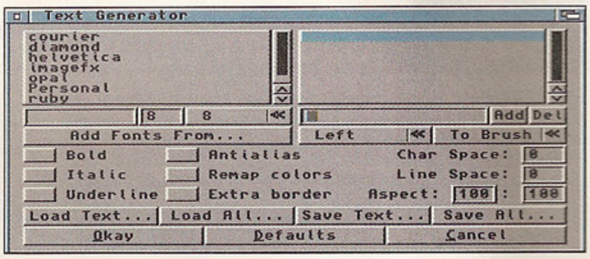
Kermit Woodall talks you through the second part of this exclusive look at the development of the *ImageFX* processing package.

When we last left off I was still pleasantly dreaming of Vogon deathships having their way with our editor Ben Vost. In an unrelated move, Ben tells me again of my deadline for this second article only days before the deadline comes due. Again. He swears this time that he actually advised me of the deadline long ago and that I must have forgotten. I don't remember this, so I choose to blame him anyway.

Aside from all that, the article you're reading here will be detailing all the new features of *ImageFX 4*. I'll be detailing the upgraded effects and the new effects and I'll be going over all of the new animation features that have been added to this version.

EVERYTHING OLD IS NEW AGAIN

In every release of *ImageFX* we revisit some areas and improve them. Mostly this involves fixing new bugs here and there, or tweaking some effects features to take advantage of things like layers or the new animation frames.



The new Text Generator menu – text is previewed over the image.

Balance, Scale, almost everything under Color and some things under Convolve have been updated in *ImageFX 4* to operate on a layered image or all the frames of a loaded animation. In the future, *ImageFX* will become more 'animation aware', but these functions were the first to receive this treatment. In most cases, like Balance and Scale, you'll want to be able to adjust the colours or size of the image or animation as a whole. We could let you do it frame by frame, but we're kind people and made it easier than that.

> **You can easily distort an image, skew it from one side to another, and even bend and twist it around...**

The Lens Flare effect has had some very nice improvements made to it. First off, its antialiasing is far better, providing far more realistic flare effects now. We've also added two new light designs. The previous Lens Flare used a simplified version of the Radial Star effect. In the new Lens Flare, that's the Medium light setting.

The small light setting provides a star/light effect similar to what you'd see in *Photoshop* or *Lightwave*. The Large light setting combines two Radial Star effects and lets you control the offset so you can design really far out light sources. You can also rotate the light source and any of the various light types can be selected to simulate an Anamorphic lens stretch. This will elongate the lens flares horizontally.

The Text Generator has had a major overhaul to vastly improve its abilities to create text in *ImageFX*. In addition to using any Amiga bitmap, CG, or Colorfont, you can now also use any *Postscript* fonts you may have installed. Subpixel antialiasing has also been added so that all those annoying jaggy edges are gone as well. This is the same antialiasing method that everyone has been looking at in other packages (typically more expensive packages too!) and wanting in *ImageFX*. It's absolutely 100% better than whatever it was we used before.

You can also control the character spacing, line spacing and the overall aspect of the text, but best of all, you can now see the type, as you add it, over the image itself – you don't have to rely on a preview within the Text menu any more. Also, the results can now be output to a brush or a layer for even more flexibility.

WHAT'S NEW, PUSSYCAT?

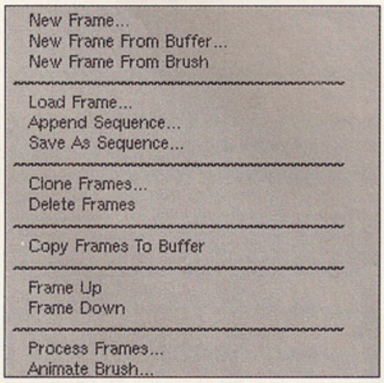
Beware of the Blob! No, not the cheesy horror movie of the 1950s, but the all-new effect in *ImageFX 4*. The name Blob is quite descriptive of this effect. It creates a coloured, or clear, blob of digital goo on your image and can animate it flowing across the image in any direction. As a blob flows, it can create a trail of slime behind it as well.

The goo distorts the image beneath it and you have full control over the colour tinting. Want to take a picture of your mates and show the nasty effects of a bad head cold? A little green blob work later and you've got a picture too disgusting for words. You can animate an oily puddle dripping down the camera lens and many other completely useless and fun things!

As I write this we've just celebrated



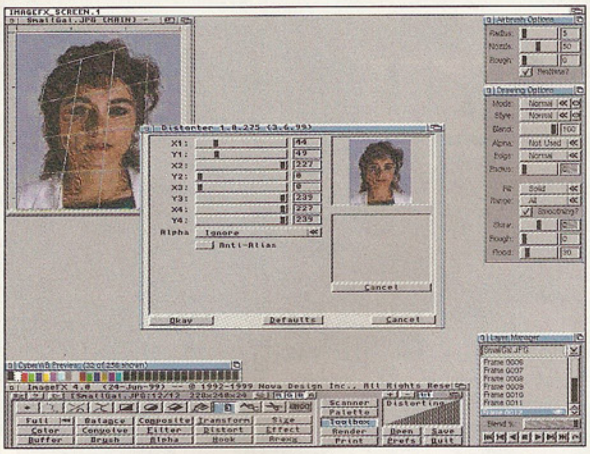
The new Layer Manager with VCR-style animation controls.



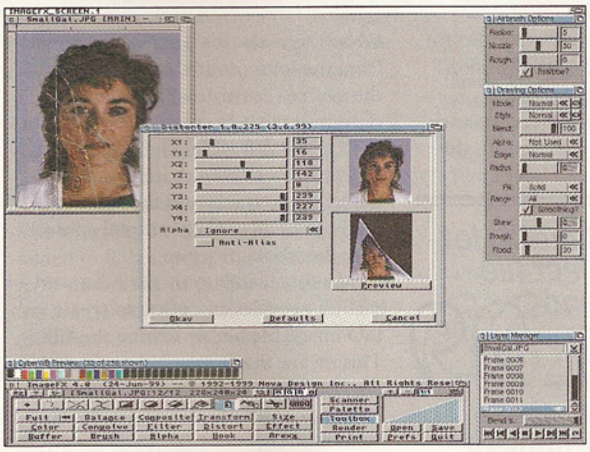
The new Layer Manager FRAMES menu.



A lens flare effect using the Large setting that merges two lights with a rotation offset to make a more realistic light.



Complete *ImageFX* interface showing Distorter on one frame of an animation.



Full *ImageFX* interface with the Distorter.

Independence Day here. While I don't think July 4th has quite the same sense of excitement in Britain for some reason, you do have your Guy Fawkes Day. What these days have in common are fireworks, and now *ImageFX* has them too. The *ImageFX Fireworks* module creates easily animated fireworks bursts. By default it will create a rather nice spherical burst, and you can adjust the controls to make directional bursts to your liking. You have control over all the necessary parameters, such as force, gravity and the like. Even better, you can replace the built-in particles with any brush you can load. You can go from exploding fireworks to a shower of coins or have your fireworks explode with happy faces.

In some experiments, I've found it's not too hard to use one of the abstract smears in the Brush drawer to create fireworks in grayscales and use the False Color effect to remap the grays to a new colour palette to resemble fiery explosions or psychedelic clouds.

For all of you who don't merely use *ImageFX* for fun and need industrial strength effects for everyday image editing, there's a fantastic new effect called Distorter. This effect is similar to the 3D Perspective Rotate. After you bring up the menu, you'll see a grid over your image. Instead of rotating though, you can grab the corners and start moving and bending them to your needs.

You can easily distort an image, skew it from one side to another, stretch it, and even bend and twist it around, moving one edge under or over another. This makes reforming a logo around a product box easy. Want to place a company's logo over another one on a sign in a picture? It's easy – there's nothing to it with Distorter.

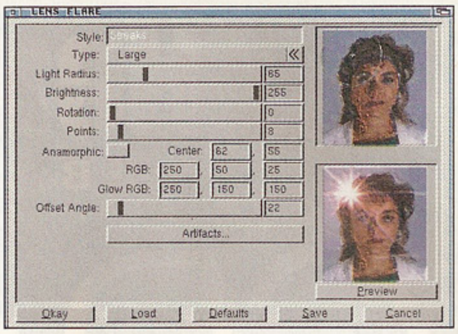
GET ANIMATED

This is the best new thing by far in *ImageFX 4* – animation. So many of the revamped effects and redesigns have all centred on adding animation support directly to *ImageFX*. Now you can load up any Amiga ANIM file and directly edit the frames. If you're used to using the animation features in *DPaint* you'll be comfortable with *ImageFX*'s animation features. You can even use the same keystrokes to move around in an animation and *ImageFX* has gone beyond this to allow you to use the Layer/Frame Manager to directly access specific frames.

You can start with animations in several ways. You can begin with a New Buffer specified to be animation frames, load a sequence of numbered frames, load an ANIM or load up a GIF animation from the Internet. You can also append a sequence to an existing image in memory as well.

The size of your images and animations and the speed of your Amiga will determine how fast the animation can play back while in *ImageFX*. Unlike *DPaint*, the images aren't kept in chip RAM and have to be copied from memory to the screen or window. This is simply done, as fast as possible – on a fast Amiga this can be faster than normal playback, but on a slow Amiga it can be slow. For a real idea of how fast the animations are, use *Viewtek* or another animation viewer to view the saved results.

When you work in *ImageFX* in the default Windowed environment, you'll have access to the layer/frame manager and you can directly move from any frame to another. You can also access the VCR-style controls to play the animation, advance to the next or previous frame, move to the beginning or end or jump to another frame.



The new Lens Flare menu with a Large-style light.

With the layer/frame manager active, you can also move frames around (an impossibly difficult task in *DPaint*) and do a little bit of rough editing on your animation work.

In the menu you can also select to Animate Brush. This is similar to *DPaint*'s Move Requester and allows you to animate a brush and move it across a series of images automatically. *ImageFX* goes another step further and has a Process Frames feature that allows you to execute any AutoFX ARexx script across a series of frames. You can use the EOT prefixed scripts to animate an Effect Over Time as well. If you don't want to do all the frames, just select the frames you want.

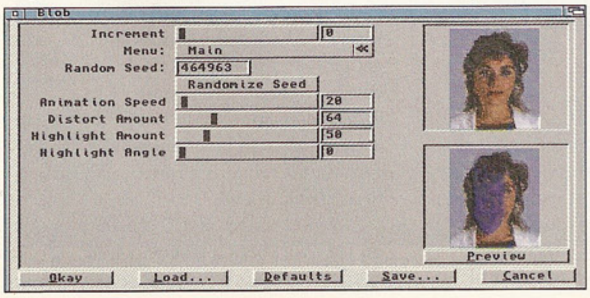
You can also use *ImageFX*'s Light Table feature within animations as well (just hit L for Light Table) to see through your current image to the one that's below it.

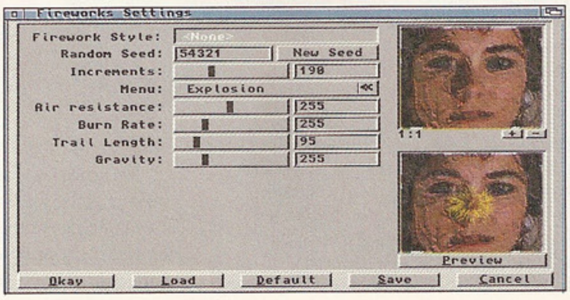
Coinciding with the release of *ImageFX 4* will be the release of the public domain GIF modules on the Internet. These have been fully upgraded to support GIF animations. *ImageFX 4* beta testers have already used these to create some stunning animations for several websites. It's just amazingly easy to make GIF animations with all the new animation features which we've added.

THIS MONTH'S WRAP UP

That's enough for this month. We'll wrap up this series of articles next issue with some detailed tutorials on how to use the new animation features of *ImageFX*, and show you many more samples of the kind of work that *ImageFX 4* can do for you, and how much fun it can be! AF

Blob menu showing a default blob over an image.





The fireworks menu, showing a default fireworks burst.

Head-2-Head

Neil Bothwick burns metal in his in-depth round-up of the best CD writing software available.

CD Writers

The cost of burning your own CDs is continuing to fall. What was a specialist application a few years ago is now open to most people at a reasonable price. Drive and media costs have fallen to the point where CD-R is an excellent choice as a backup system, with the obvious advantages of being able to create your own data and audio CDs too.

While hardware has moved from the professional to the hobbyist market, the burning software available for the Amiga is more than capable of producing professional quality results. We look at the three main packages and see how they compare on features, ease of use and quality.

FIRST IMPRESSIONS

MakeCD, *MasterISO* and *BurnIT* all use the standard *Installer* to install. The first time you start *MakeCD*, it takes you straight to the settings window where you can set up the source and target drives. *MasterISO* has a System Test section where you can ensure that your hardware is capable of driving your CD writer at maximum speed. Burning CDs can be a complex business as all of the programs have a large range of options, many of which don't need to be touched for most purposes. It's important to have these options available for when they're needed, but they can cause confusion for many users most of the time.

MakeCD and *MasterISO* each take a different approach to dealing with this situation. *MakeCD* has two User Level settings, Novice and Expert. Novice mode hides many of the configuration gadgets from the GUI, using the default settings or whatever was previously saved in Advanced mode. Novice Mode is a misleading name because it's also useful for advanced users much of the time. Hiding the extra options makes the GUI easier to use and you can always switch to Advanced Mode if you need to change one of the other settings.

> "MasterISO and MakeCD let you save a project file containing all the settings and source information for a CD."

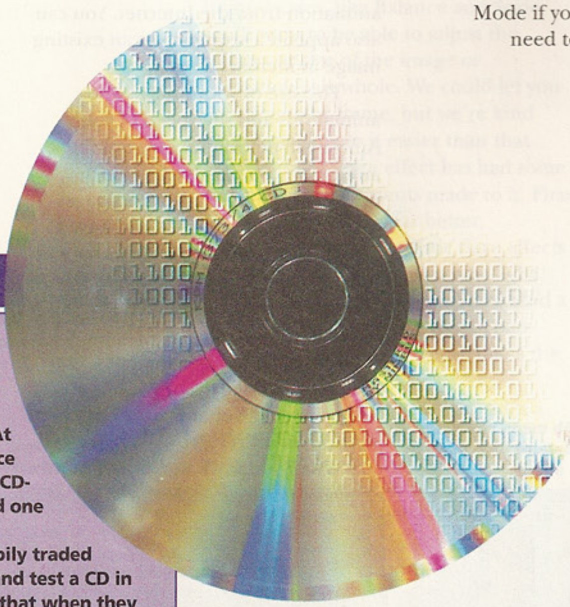
MasterISO has separate windows for creating data, audio and backup CDs. These each contain only the settings needed for that type of CD. Each window is divided into a number of tabbed sections. It's a logical progression from the leftmost tab, where you select the source files or tracks, to the rightmost tab, where you write the data to CD. The Advanced section has separate windows for handling data tracks, audio tracks and for writing tracks to CD-R. This gives total control over the whole process.

Unfortunately, only the Advanced section provides an option to create an ISO image file before writing the CD. This means that a user with a slower machine is forced to use the Advanced section for all tasks, even a simple copy from hard drive to CD.

The programs each take a very different approach to GUI design. *BurnIT* has a small dock window that launches a separate window for each of its functions. These are Convert Audio, Preferences, Play Audio, Read CD Data, ISO Masker, Audio Studio, Make DAO and TAO CDs, and Recover CD. The windows are fairly well laid out with the Help key bringing up context-sensitive AmigaGuide help, but it's hard-coded with the Topaz font – hardly ideal on a High Res screen.

MakeCD also uses separate windows, but without the central controlling dock it can be confusing to move between them and know exactly which window you need for a particular function. Everything is there and it's fine once you're used to it, but it does make the program more difficult to get to grips with at first. *MakeCD* has context-sensitive AmigaGuide help, but it also uses the Quickhelp feature of its Triton GUI. This works rather like *MUI*'s bubble help, except it's faster and can easily be switched on and off from any window. Moving the mouse over a gadget or window pops up a comprehensive description of its function or contents. *MakeCD*'s appearance can be changed with *Triton Prefs*, but it remains a functional, rather than attractive, GUI.

BurnIT and *MakeCD* can both open on the Workbench screen. Their windows are AppWindows, making



CD-R OR CDRW?

A CD-R disc is write-once – it cannot be reused – whereas CD-RW discs are erasable and you can wipe them and start again. When blank CD-Rs cost around £8 each, the idea of reusable discs was very attractive. At that time, however, CD-RW drives were twice the price and half the speed. As the cost of CD-RW drives fell, so did CD-R media, to around one pound per disc.

When I was producing cover CDs, I happily traded that slight disc cost for the ability to burn and test a CD in 20 minutes instead of 40. Yamaha changed that when they introduced the first 4x rewritable drive at a similar price to CD-R drives. A drive like the Yamaha 4416 now provides the most economic and flexible solution. However, it's all about to change again with the recent introduction of 6x and 8x drives from Teac and Plextor. Once again, the choice is between speed and cost – it's up to you.

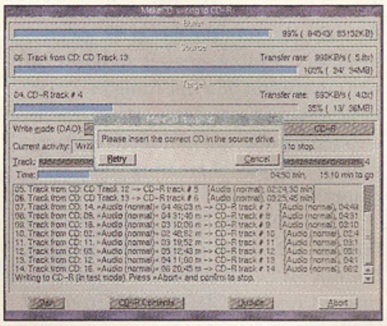
DAO OR TAO

You'll see these terms whenever you read about CD writing, standing for Disc At Once and Track At Once. The usual way of creating a CD is to build each track, data or audio, separately, and let the CD writer take care of the gaps between the tracks, placing index markers and updating the table of contents of the CD. This is Track At Once – you write the tracks and the hardware places them on the disc.

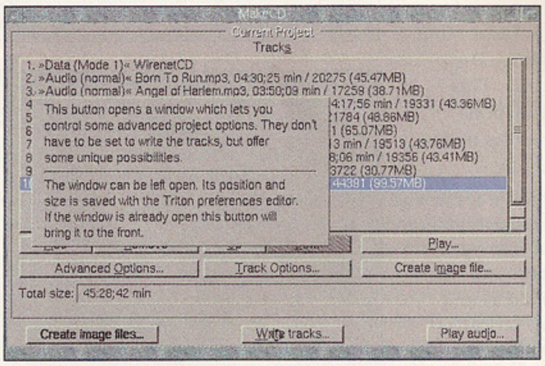
Disc At Once leaves all the work to the software. This creates the entire disc as a single image, containing all the tracks, track information, Table of Contents and so forth. This is a lot more work for the software and is the reason DAO versions are more expensive, but it gives more control over the finished product. If you want to create an audio CD without the normal two second gap between tracks, either because that's the way you want it to sound or you want to cram more on the disc, you need to use DAO.



This may look like a normal CD displayed in a *DOpus* lister, but it's the ISO image file mounted as a disc, using a neat utility supplied with *MakeCD*. It means you can test CDs without having to burn them to CD-R.



***MakeCD* creating a DAO audio CD on the fly from tracks on several source CDs. The large buffer allows over two minutes to change the CD after the requester appears.**



The *MakeCD* main window, showing a mixed data and audio CD and the detailed pop-up help messages.

adding a drawer or file to a CD as simple as dragging its icon over the appropriate window. *MasterISO* runs on a separate screen so this isn't possible.

CREATING DATA CDS

Adding files to a data CD in *MakeCD* is simply a matter of creating a new track and selecting the hard drive paths to be added to it. It expects the data on your hard drive to be in the format wanted for the CD and allows no alteration or modification of individual files.

This is fine when you're making something like a cover CD and you have all the files on a separate hard drive partition. You'd have everything set up as you wanted it and would simply need to build the CD image and burn it to disc. You can add multiple source drives and put each one in a separate drawer if you wish. This is useful for making backups of multiple partitions on the same CD as each partition can go in its own drawer. *MakeCD* can change the order in which files are written, based on file extension. The main use of this is to place all icon files first to speed up window opening on Workbench.

> **All three write in standard ISO formats, as well as handling Rock Ridge extensions, including the Amiga ones.**

BurnIT and *MasterISO* provide far more control over the contents of each CD. Upon adding files to the CD they display a list tree of all files. You may add, remove or rename individual files. *MasterISO* also allows you to give files different names according to to the file system used to create them. You can create directories on the CD so you can backup partitions into their own drawers and select only the files or directories you need. This is particularly useful if you have directories containing large amounts of temporary data, such as logfiles or caches, which would result in the complete partition having too much data to fit on a CD.

A consequence of these different approaches is that *MakeCD* simply adds the partition or drawer to its list, whereas *MasterISO* and *BurnIT* scan it first. This makes adding data with *MakeCD* faster as the scanning is left until just before the image is built, but it means you don't know how much space your data will use on the CD until you do a test burn. *MasterISO* scans the disk much faster than *BurnIT* and also displays the space used in MB, as well as the free space on the target CD. *BurnIT* just shows the number of files, directories and blocks used.

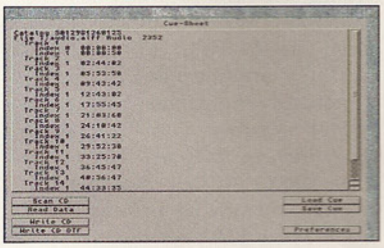
MasterISO and *MakeCD* let you save a project file containing all the settings and source information for a CD. This is important if you regularly produce similar CDs, such as backing up your hard drive or producing CDs in standard formats. *BurnIT* has no such facility, which means you have to set up the data paths each time you start it.

All three write in standard ISO formats, as well as handling the Rock Ridge extensions, including the Amiga ones. *MasterISO* and *BurnIT* will also create Joliet CDs, the new "standard" introduced for Windows 95, although Windows machines will quite happily read Rock Ridge CDs.

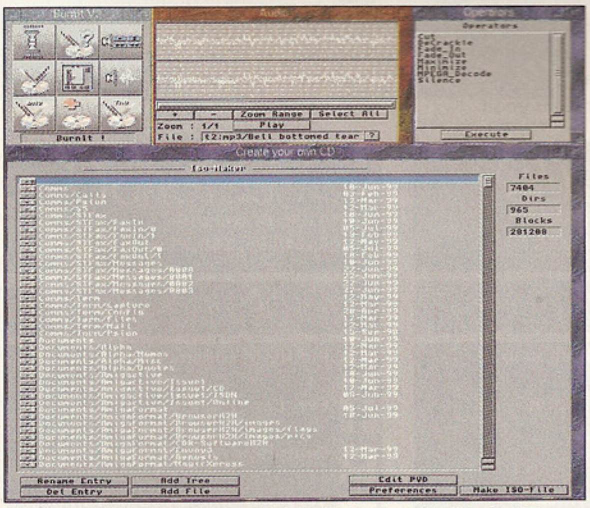
MAKING AUDIO CDS

Once again, *MakeCD* takes the approach that its job is to convert data to CD format and burn it to the disk. There are no file processing options but it will accept data in a range of audio formats, including MPEG, and convert it on the fly if your CPU is fast enough. MPEG decoding is handled by *mpega.library* and is the only time *MakeCD* will make use of a PowerPC. Dragging a bunch of MPEG files from a *DOpus* lister to *MakeCD*'s window, pressing "Write Tracks" and having them decoded

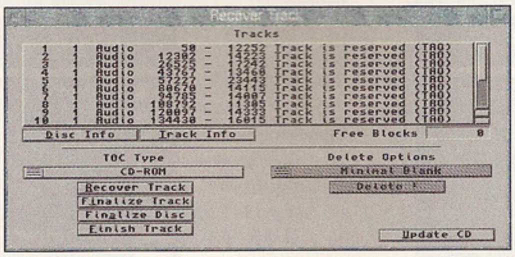
Continued overleaf ➡



***BurnIT*'s Recover CD window. This will sometimes let you repair a CD that has suffered a data underrun so you can then use the rest of the disc.**



The *BurnIT* dock, Audio Studio and Audio Operators, with the ISO Maker window showing a data CD ready for burning.



***BurnIT* preparing to create an audio CD in Disc-At-Once mode.**

and converted to CD audio on the fly and written to the CD at 4x speed while still reading email is an impressive demonstration of a fast Amiga's multitasking capabilities. *MakeCD* will also read audio tracks directly from a CD, an easy way of creating your own compilation discs.

MasterISO's audio handling is more limited. It handles most audio formats, but not MPEG. It doesn't directly support reading CDDA audio from CD but relies on its sister program, *AsimCDFS*, to handle the conversion.

BurnIT has the most comprehensive features for audio CDs by far. The Convert Audio window has support for a similar range of FileTypes as *MakeCD* but without the on-the-fly decoding. The Audio Studio is a sample editor. This handles many of the basic functions needed for processing audio files before burning to CD. Fade in and out, maximise and minimise and a de-crackle operator to process recordings sampled from old vinyl are some of the operations covered. The operators are modular and can be expanded as new ones are released. The more processor-intensive ones have PowerPC versions too.

CD COPYING

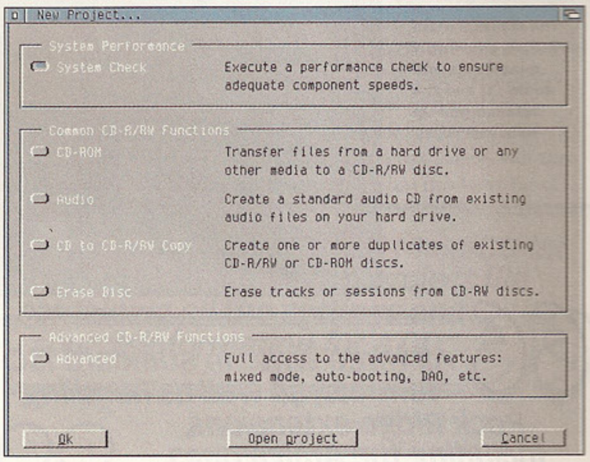
All three programs are able to copy a standard data or audio CD, although *MasterISO* requires *AsimCDFS* for the latter. They do this by reading the data as if it were any other source and writing it to the target CD. This means they have to be able to read the source CD's data, which isn't the case with CDs in odd formats, like Mac HFS. *MakeCD*'s advanced settings provide the option of copying a CD in raw format using DAO.

IMAGE FILES VS ON-THE-FLY BURNING

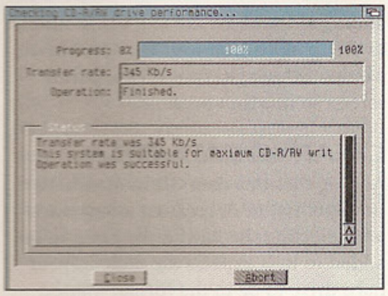
The term "track" when used about CDs is rather misleading as there are no physical tracks. A CD consists of a stream of blocks, each containing either 2KB of data or 1/75 of a second of audio. The track divisions are stored as reference points in the CD's table of contents. The data you're writing to the CD has to be converted to this format.

An on-the-fly conversion converts the data from your hard drive and writes it directly to the CD writer. If it can't convert and write it fast enough, the CD writer runs out of data and the CD-R is ruined. CD writers usually have a 2MB buffer on board and the software will use as much fast RAM as you allocate to make sure you don't get a buffer underrun, but a slower machine may not be able to keep up. You could try reducing the write speed, but a safer approach is to do the job in two stages. First you convert the data and write it to a file on your hard drive, a so-called ISO image because it's in the exact format required by the CD writer. Then you copy this image to the writer. It doesn't matter how long the conversion takes now, and writing the image file to the writer isn't particularly hard work for the computer so a slower CPU or controller can still cope.

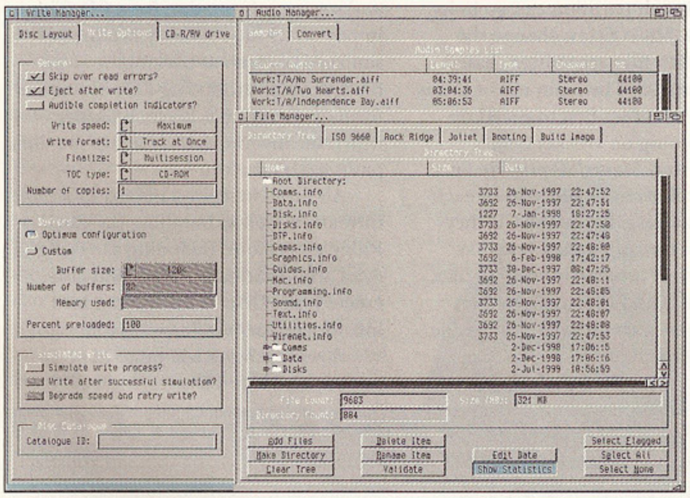
The other benefit of image files is if you want to make several copies of the same CD. You only need to perform the data conversion once and copy the image to the writer as many times as you need. The disadvantage of image files is that you need hard drive space to store them – over 700MB for a full 74 minutes of audio.



MasterISO's introductory screen, giving the choice of starting any type of new project or loading an existing one.



MasterISO's system check giving my SCSI controller and CD writer a clean bill of health.



The Advanced section of *MasterISO*, with the CD writing options, the contents of the data track and the list of audio tracks on show.

WHICH ONE IS BEST?

As usual, it depends on what you need. *MakeCD* is the best for taking data from any source and putting it onto CD. It doesn't provide any options from editing the data but it converts from almost any format. The GUI is less intuitive than the others but the online help is good.

BurnIT has a greater range of options. You can edit the contents of a data track and it provides useful audio processing tools. The GUI would be the best of the three if it weren't for its insistence on using the Topaz font. The online help is useful and the DAO version has a printed manual too.

MasterISO was the most infuriating to test as the range of features for creating data CDs was greater than the others, but it was totally unstable on my A4000/'060/PowerPC. I lost count of the number of times it crashed while testing it – not only the program crashing, but trashing memory and locking up the whole machine. It ran well, albeit slower, on my A2000/'040, but CD writing is a processor-intensive job and not working reliably on an '060-based machine is bad news. There was no online help with *MasterISO* but it comes with a comprehensive manual. The manual's appendices contain useful information on general aspects of CD recording.

BurnIT

SUPPLIER: Epic Marketing
PRICE: £35 TAO, £56 DAO

Pros and Cons

- \+ Comfortable GUI.
- \+ Audio processing tools.
- \+ Joliet support.
- − Unable to save projects.

MakeCD

SUPPLIER: Hisoft, Eyetech
PRICE: £34.95 TAO, £49.95 DAO

Pros and Cons

- \+ Informative bubble help.
- \+ On-the-fly translation.
- \+ Easy CD copying.
- − Unintuitive interface.

MasterISO

SUPPLIER: Blittersoft
PRICE: £49.95, £69.95 with *AsimCDFS*

Pros and Cons

- \+ Plenty of control over data CDs.
- \+ Excellent manual.
- − Sometimes needs *AsimCDFS*.
- − Very unstable on some Amigas.



Workbench

Simon Goodwin takes over the role of *AF*'s Agony Uncle. Email: amformat@futurenet.co.uk, putting Workbench in the subject line, or write to: **Workbench • Amiga Format • 30 Monmouth Street • Bath • Somerset • BA1 2BW.**

AFCD43:-In_the_Mag-/Workbench ON THIS MONTH'S CD

FAULTY FLOPPY

I have an A1200, Apollo '040/40 with a 16MB SIMM on board with a 120MB hard drive. I've just bought a 32x CD-R and a mini tower to house it all. After just a couple of hiccups, everything has been fitted in and powered up. The only problem is that the floppy drive isn't working. On boot up, the floppy gives the usual disc icon but underneath it says DF0:????. When I click on it, a message at the top of the screen tells me that "the icon(s) have no default tool" and trying to raise the information screen gives the message "info failed".

Everything was working alright before I took it out of the desktop case, so do you have any ideas as to what I may have done and what I can do to fix it?

Paul Crellin, via email

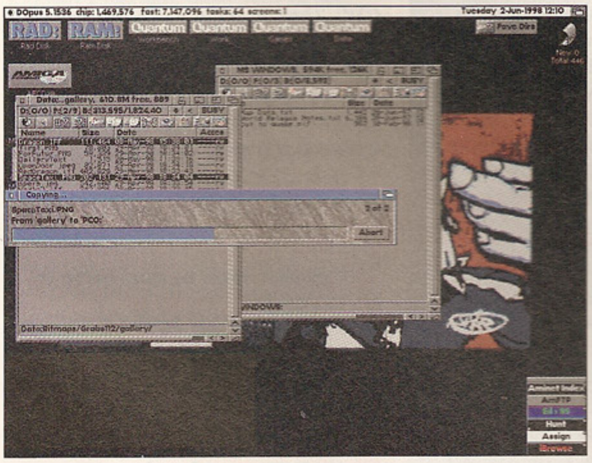
I'm pretty sure this is a connector problem. That's just what happens if you start an Amiga with no DF0: floppy drive connected, or plug the drive in the wrong way up, although the drive light shines continuously in the latter case. Check both ends of the floppy cable, making sure that it's correctly plugged in – not at an angle, or displaced to leave a 'spare' couple of pins at either end. Then check the power cable from the Amiga to the drive.

CROSSDOS TO THE RESCUE

I'm having trouble reading PC disks with my Amiga. I just want to take a JPEG file and transfer it to the PC at college to make use of the printers/scanners, etc, but having followed all of the instructions available to me, I can't get the Amiga to recognise my PC disks, which I've formatted to 720KB. Please help as it's driving me mad!

Also, my computer has started crashing erratically. I think my standard PSU may be getting tired of running the extra hardware. It's lasted about eight months running the current setup and for about five years before I expanded it. What do you think? Do I need a more powerful PSU? If so, which kind should I get? Any help or advice would be much appreciated.

Stevie Glover, via email



As this old picture shows, copying long filename-equipped files to an Amiga is really easy with *CrossDOS 7*.

The simple answer is to use CrossDOS *and look through the past three years or so of* Amiga Format. *I think your PSU could be knackered too, so yes, get a new one.*

ACCESS ALL AREAS

I've recently been using Microsoft *Access* (spit, spit) on the PC at my work experience placement, and have been doing a bit of database management work using *SQL*. I was wondering if there are any implementations of *SQL* on the Amiga, either an *SQL* Server or a database package that supports the *SQL* language, a la *Access* (spit, spit).

I'll be building a products database for the company soon and would like to use *SQL* as it is both fast and very English-like, and English is a language that can I fluently speak very.

Gareth Griffiths, via email

No problem – there are several freely-distributable Amiga SQL *(Structured Query Language) engines.* SQLDB *is a bit old now, but quite concise.* MiniSQL *is still actively developed but rather defies the 'minuscule' tag as it now runs to several megabytes, including source and wrappers for compatibility with* BASIC *and* C++. *Another heavyweight database management system is the Amiga port of* PostgreSQL. *You'll find all these on* AFCD43.

INFRANETWORK

I notice that Eyetech are selling an infra-red transmitter-receiver device, probably based on the AIR-link hardware project that *CU Amiga* developed as a reader project just before they went bust – it's certainly similar. Is there any software that would allow either of these devices to be used as the basis of a wireless network? Obviously this would be slow because they're controlled by the serial port. I don't know what the bandwidth using infra-red would be but some handheld machines use IR networking so I imagine that the serial port would still be the limiting factor.

Such a system should be perfectly adequate as a substitute for a null-modem cable, though it wouldn't bend around corners. It should allow file sharing and, unlike *SERnet*, the lack of a physical link may allow for more than two machines to swap data, as well as removing the vexing choice of whether to run the cable somewhere neatly or leave it on the floor for people to trip over. If I remember correctly, AIR-link was ARexx controlled so that may offer hope even if all other software can be ruled out. Or is the whole idea just too far off the wall?

Tim Ruffle, via email

It could be done, but it would be relatively slow and erratic compared with PARnet *or even* SERnet. *Wireless remotes send a few bytes, and even those don't always get through. There's no problem using* PARnet *between more than two machines, given an appropriate cable, or* SERnet *if you've got a multi-IO board. Collisions between messages would be more likely with an optical link. Source code is available if you want to try to bolt the IR low-level routines onto the network file system, but it's more limited by the AIR than the ports chosen, and I'm not aware of anyone doing this yet.*

Finally, CU *didn't go bust. Their big London publisher closed the magazine when it became insufficiently profitable.*

CODEPROBE PROBLEM

I recently upgraded my A1200 Tower from a 68030-50MHz to a 240MHz PPC 603e/68060 board, transferring the 32MB RAM from the old to the new board. I've found that when I try to use *CodeProbe v1.10a*, the *SAS/C v5.10a* debugger, programs that previously debugged correctly under *CodeProbe* now no longer debug. Basically, it's

Continued overleaf ➡

impossible to set any breakpoints; the program loads and executes as if it were run directly from the shell.

The compiler otherwise still appears to run correctly. I presume there's some incompatibility in this version of *CodeProbe* with the 68060 processor as the compiler/debugger has worked quite happily under WB1.3 and WB3.1, and has run on a 68000, 68020 and 68030. Any ideas what it might be and if there's any solution to this problem?

Iain Higgs, Cambridge

This sounds like a processor copyback cache problem. Try issuing the shell command CPU NODATACACHE before you start the debugger. You may also need to turn off the instruction cache. SAS/C 5 *is almost a decade old, and later versions include alterations for the 68060. Unfortunately,* SAS *is no longer in development.*

In the long run, you'll probably need to switch to a compiler with PowerPC, as well as modern 68K, support – Richard's roundup in issue 125 comprehensively compared the current options.

LESS SENSIBLE

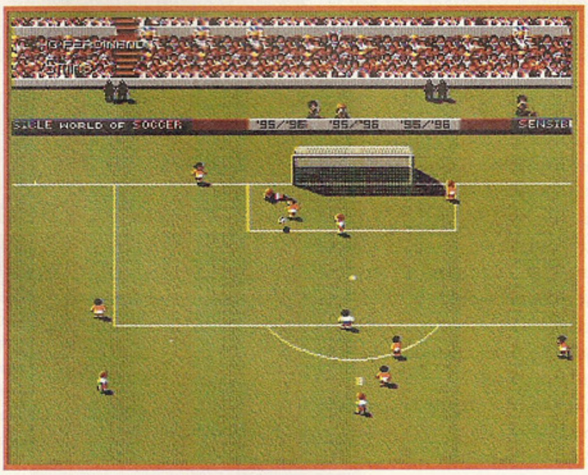
A while ago I purchased an Apollo '040 accelerator card with 16MB fast RAM for my A1200. Unfortunately, the best game ever, *Sensible World of Soccer*, now refuses to work on my beloved machine.

Do you know of any keyboard shortcuts that will temporarily disable the card without having to remove it altogether? This has been the only drawback to it so far.

Nicholas Rock, via email

There's no way to disable that Apollo from the keyboard, as you can a Blizzard accelerator (by pressing "2" during startup). The closest you can get is to connect a switch to the jumper on the board marked RAM. If this jumper is open, you disable the accelerator as well as the memory. Tower users can easily connect this to the otherwise redundant 'Turbo' button on a PC case. Otherwise, you'll have to delve under the trapdoor when you need your fix of Sensi, *or find a degrader or hard drive installer that's compatible with* SWOS *on '040s.*

SWOS comes in many versions. Sentinel's original SWOS2HD *didn't take account of really fast memory, but version 2.1 of Piotr Bieniek's* SWOSHD *has been tested on a Blizzard 1240 with the 96/97 version, and the prolific Jean-François Fabre's* SWOS_JST_HD *supports other releases on a 68060 with 16MB fast RAM, so it should suit your 68040 as well. All three are on Aminet and* AFCD43.



Playing *Sensible* on a fast machine is pretty easy.

CD BENCHMARKS

Can you explain to me why CD-ROMs over 24x on the Amiga are slower than a 20x CD-ROM? For example, my 44x speed CD-ROM is faster once it gets going, but I prefer using a 4x speed on the Amiga as it's not as loud and also loads faster.

C.Klausen, Denmark

When CD speeds went into double figures the manufacturers changed the design. Rather than spin the disc continuously, they wind it down after a preset delay to save wear on the mechanism. The start-up time often dwarfs the time to access files of less than a few megabytes, and the high speed is noisy, as you've noticed. Users of 'fast' drives can send SCSI or ATAPI commands to keep the drive spinning for longer, but noise and wear remain a problem. Given the bandwidth limits elsewhere in the Amiga, the main advantages of newer 'high speed' drives are lower prices and ready availability.

The difference in performance is much less than you might think, partly because the new drives only achieve their rated speed on the last megabytes of a full 670MB CD. Old drives get a constant data rate by spinning faster on the shorter, inner tracks, most often accessed.

New CAV (Constant Angular Velocity) drives use buffers to compensate for the higher data rate at the outside end of the disk. If the CD holds 100MB or so – typical for un-padded Amiga releases – you get less than half the rated speed, even when the drive is running flat out. The 'best case' figure is actually a poor guide to real performance.

SHARING IP

I want to network my A4000 ('060, CV64/3D, 56K modem) to my A1200T ('030 + FPU) in such a way that I can let the A1200 use the Internet connection at the same time as the A4000. From reading recent articles in the mag, I know this can be done using Ethernet, serial and parallel networks.

I use *PARnet* for normal data transfer between the two computers and I also have a null-modem cable, although I couldn't use this at the same time as the modem. Ethernet, while probably the best networking solution, is a little out of my price range at the moment. I use Internet software from the *NetConnect 2* suite and I've upgraded *Genesis to v2.3* using the freely available updates from Active. Both computers have Workbench 3.0 and plenty of RAM. Ideally I'd like to somehow use the parallel ports to achieve this shared Internet access goal. If it's possible, what software/devices would I need and how would I go about setting things up?

Martyn Bampton, via email

You need PLIP, the Parallel Port Internet Protocol driver. This is used in place of SLIP or PPP, connecting the TCP/IP stacks to the interface hardware. You also need to assign addresses (IP numbers) to the machines so you can communicate with them as you would with your Internet Service Provider (ISP). These are sets of four-byte values, written in decimal with full stops between them. Local numbers start with 192.168, so your network might use 192.168.0.1 and 19.168.0.2, allowing later expansion to thousands of Amigas, Macs, Z88s, PCs, etc.

NET GOOD ENOUGH?

I have a A1200 Tower with a 425MB hard drive and would like to use my A1200 for the Internet.

1 Would an Apollo 68030 be good enough for the job?

2 How much memory would be best to have, without having to buy two 32MB SIMMs?

3 I have a Commodore PC external 28.8K modem. Would I need drivers or would the Amiga pick it up?

4 I have an Internet account with Cablenet (Telwest). The protocols are: TCP\IP. SERVER TYPE PPP:INTERNET WINDOWS NT SERVER. Would I be able to use my existing account for my Amiga? If so, which type of Internet software would I need to get?

5 Can I use my old PC UDMA 3.2GB hard drive with an EZCD-SE IDE interface, used with my A1200 Tower? Thanks!

Keith Parsons via email

1 A modem would be much better to use, really.

2 Well, just get one 32MB SIMM then, or one 16MB SIMM.

3 You mean you haven't even tried it yet? The modem will work fine. Just connect it.

4 Yes, it will be fine. Use Miami or get the NetConnect 2 pack.

5 Can't see any problem with that. Just make sure you get the jumper on the drives the right way round.



***Miami*'s great for getting online.**

The TCP/IP stack forwards messages from satellite machines to the 'master' with a direct Internet connection. The satellite uses the IP number you've assigned to the master machine in the local network, which forwards the messages to the ISP. A program like SOCKS5 (on Aminet and our CD) can serve as a 'proxy', keeping copies of information requested, so you can download FTP directly to the A1200 even though it hasn't got an external address. In this way, all your machines are online with everything else on the Internet. The use of 'local' IP numbers stops people logging onto your satellite computers directly.

KICKSTART 1.3 HARD DRIVES

I just appropriated a Kickstart ROM switcher but for the life of me I can't get the hard drive partition to be used by the Workbench 1.3 side. When I activate the ROM switcher with the three finger salute for the 1.3 side, all I get is the old 1.3 floppy disk. When I put the 1.3 startup disk in the floppy drive, there's no hard drive to be seen. Is there anything you can do?

Michael Madden, via email

I'm doing just this with an AlfaData interface on my old A500, so it's possible. It's hard to be specific without knowing exactly which interface you're using. You need to format the partition with OFS *or* FFS *(Old or* Fast File System*), 512-byte blocks and a standard Rigid Disk Block. It's best to do this with the Kickstart 1.3 utilities and add Kickstart 2 files later, rather than the other way round, or you may end up with a setup that only Workbench 2 can understand. Workbench 2 can read all 1.3 partitions, but not necessarily the other way round.*

Alternatively you could use HDToolbox *to put a 2.04 or 3.0 file system in the Rigid Disk Block of the drive. If the interface is properly programmed, this will get used in place of the old one (in ROM), giving you most of the later features, even from Kickstart 1.3. Unfortunately, this doesn't work with the Kickstart 3.1 FFS so you still won't be able to use 1K or larger blocks in a partition.*

ZORRO CONVERSION

I have an A1200 with an 8MB RAM card and a Seagate hard drive. At the moment I'm confused. When I was using *SysInfo* a while ago, I noticed that it thought an extra board was present in my Amiga, along with the RAM card.

Just to make sure it wasn't the program, I ran *SysSpeed* and that said I had a Zorro III card in my Amiga, which is impossible. Could you possibly tell me why this has happened?

Robbie Almond, via email

Some accelerators add memory in the 32-bit address area, above the 16MB limit for Zorro II. This prevents clashes with PCMCIA and Zorro II expansion. Dimwitted programs describe anything with a 32-bit address as

Feedback

PARALLEL ZIPS

In response to a letter printed in Workbench about parallel port Zip drives (John Holroyd), your advice was completely wrong. Blittersoft supply an adaptor that will allow you to attach the Zip drive to the Amiga Parallel port with an adaptor. This comes with drivers and works happily with the 100MB and 250MB version as well. Can you please pass on Blittersoft's details to John so that he can use this great backup device?

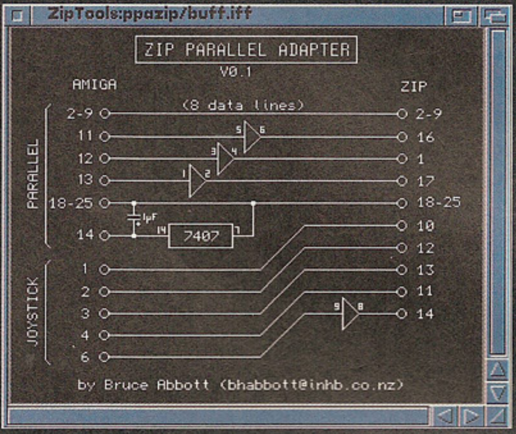
Erol Ismael, via email

In response to John Holroyd's parallel port Zip drive query in issue 125, a parallel interface adaptor for the Amiga is manufactured by Stafford & Weston and sold over here by Blittersoft. I've been using one for several months and I'm very happy with its performance.

The interface isn't the best construction I've come across, so don't keep fitting and removing it. A cheaper DIY option is shown on the PD pages of that issue. It appears to be the same adaptor design with a different device handler.

Steven Deaville, via email

What John Kennedy wrote used to be true, but now you can hook up PC parallel peripherals with an adaptor to steal extra signals from another Amiga's ports and custom code (on Aminet). It's still a lot slower than SCSI, or even IDE, because it requires several slow transfers for each byte. However, it now works as well as the equivalent on most IBMs.



Here's a DIY way of making a parallel port adaptor for a Zip.

REMAPPING

In response to Dillon Eyre's letter, 'Fast Enough For Ya?' (*AF125*), the magenta/purple screen is seen when the system crashes after Kickstart has been relocated by a utility such as CPU FastROM. This process requires an MMU which isn't present in the 68EC020, the default processor, and so my guess is that everything goes pear shaped as the utility attempts the relocate Kickstart.

Danny Shepherd, via email

Some accelerators (including Blizzards, Commodore 3640 and A3000) have remapping hardware that doesn't require the MMU. A ROM fault normally causes a red screen but can also give purple. Green indicates faulty chip RAM and yellow signals an untrapped processor exception.

DRIVE HARDENING

Can you pass this message on to James Potter in answer to his hard drive problems from issue 124? I've had this problem in the past. As you say, you've had problems with the angle of your drive and it has worked and then stopped again. I think it's the solder from your hard drive connector to its circuit board. If you press down on the cable side of the connector you should see cracks in the solder.

To confirm this before you get your soldering iron out, boot with the case open and push down on the connector so the pressure is on the connectors to the circuit board. Everything should boot fine. I hope this is of help.

Graeme Richards, via email

It sounds like it's time for a new drive to me, but I'd check the cable first as it's just as likely to contribute to this sort of flaky mechanical performance. The first thing to do is make a complete backup – only then can you safely experiment with DIY solutions. Hard drive bearings and platters wear out after a few years. Symptoms are extra noise and repeated seeking of data, which may not be reported as an error, but signify that a drive's on its way out.

OVEROVERSCAN

I'm responding to a query by Will Halligan in *AF125*. He asks about filling the screen on a multisync monitor without the borders. It's possible to get a screen size of 768x550 in DblPAL High Res no flicker using a set of drivers I've got. I have no borders, but like you say it's a hack. There are some limitations attached, as follows: it won't work with 3.1 ROMs (3.0 only); your mouse goes AWOL at the right hand side of the screen, although you get used to it after a while and I can hit the middle of the right hand scroll bar every time now; you can't alter the overscan at all and it throws the machine into a right old frenzy.

I must state that I didn't write the drivers, but they're available for anyone to use. Anyone wanting them can email me at paul.4@net.ntl.com and I'll gladly send a copy to them. I don't know if they're on Aminet and I don't know what they would come under. They came from a mailing list and the author's email address is no longer valid. Hope this helps anyone out there – even just one will make it worth while.

Paul Smith via email

That's pushing the limit of 'flicker free' displays. If you've got a true multiscan monitor, like a 1960 or CMV123E, you might try the HighGFX drivers on Aminet and our CD, which offer 1024x768 at 22kHz interlaced. This is too flickery for line graphics but fine for photographic images.

Super83 offers less flicker at 800x600 or even 868x624 at 77Hertz interlaced, but these modes output lines at 26 or 27kHz, which is too slow for most PC monitors. You can roll your own custom modes, scan rates and pointer limits with MonEd, also on AFCD43.

Continued overleaf ➡

Zorro III. Alas, it's not that simple. If your Amiga sprouts 100-pin slots and a steroidal power supply, you may have spontaneously achieved Zorro. Until then, dream on, like the authors of those simplistic freeware utilities.

PANASONIC DIGICAM

I've recently been given a Panasonic NV-DCF1 Digital Camera as a gift. I was wondering if any software exists which would allow me to download pictures stored on it to my Amiga. I've looked on the Internet but can't find anything.

I've also tried putting the compact flash card into a PCMCIA adaptor but it isn't recognised by my Amiga. Can you help me?

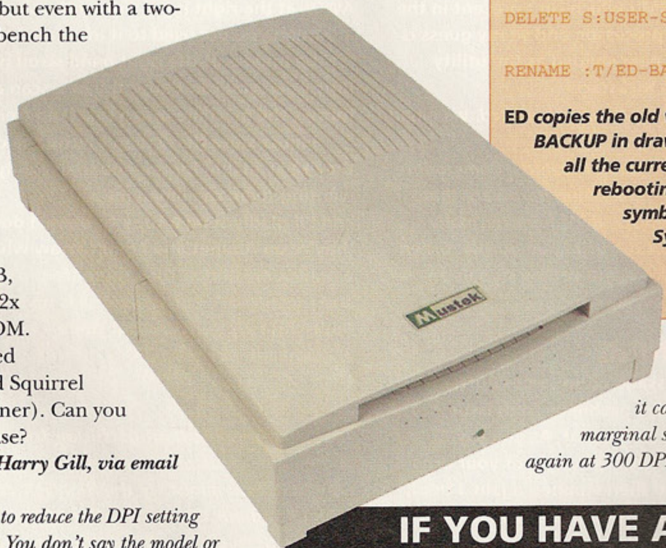
Chris Korhonen, via email

There's a new Amiga driver for the Panasonic NV-DC1000 model which might be worth a try on other models – it's on the AFCD. *Panasonic don't seem to be trying very hard to support their cameras with information or software. The protocols aren't consistent, so in the course of my searches I even found a user of Windows NT4 vainly seeking a driver for the model you've been given. As with scanners, the best advice for Amiga owners is to deal with vendors that know your platform, or check out the range of available software first, then look for a compatible unit locally.*

GREEDY SCANNER

I have a ScanExpress scanner (Mustek), connected to my A1200 with a Squirrel interface using *ScanQuix 4* software. No matter what I do I keep getting the dreaded 'not enough memory' message. This even happens when trying to scan a CD cover in greyscale, about 880K! I run a 64-colour Workbench, but even with a two-colour Workbench the result is the same. My setup is: A1200, WB 3.1 in a Power Tower, Apollo '040 25MHz 16MB, 2.1GB HD, 32x speed CD-ROM. EIDE buffered interface and Squirrel (for the scanner). Can you help me please?

Harry Gill, via email



You'll need to get more memory than you think if you get into scanning.

You may need to reduce the DPI setting of the scanner. You don't say the model or resolution of your scanner, and Mustek's vary, but at 1200 DPI in 24-bit colour the raw data for a CD cover requires over 12MB. That 880K is the expected result, not the raw data size.

The Workbench settings are irrelevant – your software needs fast RAM to hold the uncompressed image, and the greyscale conversion requires all the colour data before it can start, and probably marginal space in addition. Try again at 300 DPI and work up.

Consider getting more memory too, because scanning, rendering and emulation all place heavy demands on RAM; 16MB isn't much for intensive graphical operations these days.

PERSISTENT DEMOS

Like most Amigans, I install a lot of demos from your coverdisks. Recently I've been encountering problems when trying to delete some programs (*Elastic Dreams* and *Amiga Writer*, for example). I get the message: "error (202) – object is in use". I've tried to work out if anything running from the WBStartup could be causing this but I'm at a loss. Naturally, the programs themselves aren't running and I get this straight after startup if I try to delete.

David Thomson, via email



Look out for assigns before deleting programs like *Elastic Dreams*.

The problem is likely to be in the user-startup file, in your S: directory, rather than WBStartup. The installers have added ASSIGN commands to locate their files by a symbolic path name. You need to edit user-startup (or possibly startup-sequence on old or messy systems), looking for lines that refer to the actual drawers you're trying to delete.

For instance, Amiga Writer adds the line ASSIGN AMIGAWRITER: to user-startup, followed by the path you selected during installation. The system will not let you delete the destination drawer while that ASSIGN is active – it moans error 202, as you found, because it makes no sense for an ASSIGN to refer to a drawer that no longer exists.

Delete this line or comment it out by putting a semicolon at the start with your favourite editor, such as ED or MEMACs, in the Tools drawer on most Amigas. Programs installed in the standard way will already have a comment before and after, identifying the program that uses the ASSIGNments.

You can check through these systematically. Type ED S:USER-STARTUP in a shell, then press ESC and type FI;BEGIN, then Return. This will find the first block of assignments added by the Installer. Position the cursor with the arrow keys and then press ESC, D, then Return, to delete each line with the cursor on it, or insert semicolons at the start of lines you wish to temporarily deactivate. The changes take effect when you reboot and the modified user-startup is read to reset your configuration. If it goes wrong, press ESC and Q to abandon changes, rather than X to confirm, or restore the old file with these commands:

```
DELETE S:USER-STARTUP

RENAME :T/ED-BACKUP TO S:USER-STARTUP
```

ED copies the old version of the last thing it edited into the temporary tile ED-BACKUP in drawer T of the drive you booted from. Type ASSIGN in a shell to see all the current ASSIGNments. You can remove them temporarily, without rebooting, with the command ASSIGN PATH: REMOVE where PATH: is the symbolic name of the drawer concerned. SnoopDOS, in the System/Tools/Expert drawer on the AFCDs, is invaluable for locating the symbolic names that programs use as it can list the names used for every file access.

IF YOU HAVE A QUERY

We welcome your queries, but make sure you submit them correctly:

- **Send email to amformat@futurenet.co.uk with the subject "Workbench".**
- **Send letters to the usual *AF* address (it's on page 94 if you need it), and make sure you put "Workbench" on the envelope.**
- **Include details about your machine, such as what processor and how much RAM it has.**
- **Do your best to describe your problem succinctly.**
- **Make sure it wouldn't be easier to contact the dealer you bought the item from and ask them.**
- **Be concise!**

Amiga Format's mailing list is getting more active all the time. Over 700 people are now on it.

Why aren't you?

afb

You can subscribe to the afb by going to the following website and signing up:

http://www.egroups.com/group/afb/



Creative

The indispensable guide to getting the most out of your Amiga

SEND IT IN!

WE NEED YOUR INPUT

Is there something you would like to be able to do with your Amiga but you don't know how? Perhaps you have an idea for a tutorial on a subject that you haven't seen *Amiga Format* cover before. If you can answer yes to either of these questions, why not write in and tell us?

PROGRAMMING

Loads of Amiga users like to create their own software. Do you need some help in this area? Perhaps there's a language that's giving you grief or maybe you want to know how to exploit some feature of the Amiga's Operating System. Let us know.

GRAPHICS

We all know the Amiga is a great tool for creating graphics, but how do you go about it? Is there a particular package you'd like some tips on? Get in touch at the following address:

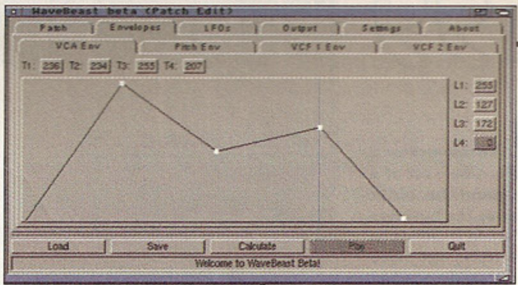
AF Creative • 30 Monmouth Street • Bath • Somerset • BA1 2BW.
Email: richard.drummond@futurenet.co.uk
Remember to put "Creative" in the subject line.

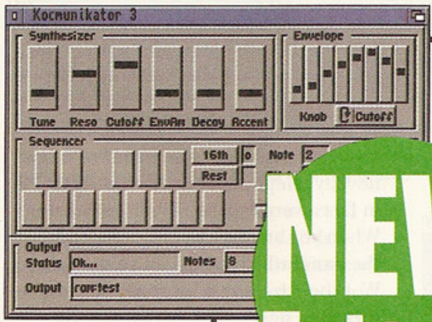
The Creative section's looking a bit packed these days, isn't it? Five tutorials, all giving you the real info on their own topics, and all asked for by the readers of *Amiga Format*. Don't forget, if you'd like to see a tutorial on any particular topic, please write in and tell me. We may not be able to include it immediately (space is always limited) but we'll add it to the pile.

Tony's new music tutorial starts this issue with a look at "Soft synths" – programs that behave like synthesisers but are on your Amiga – and he'll be concentrating more on the Amiga aspects of making music, along with bringing you an example every issue on our CD. Don't forget to check out his great cover feature too, detailing the trials and tribulations of releasing your own record. Simon's continuing to enthral with details of HAM and the Amiga's colour handling. Nick is addressing ADDRESSing, if you see what I mean. Dave is looking at email in general while I'm, well, I'm showing you how to make sure your programs are the best they can be. What more could you want?



Richard Drummond

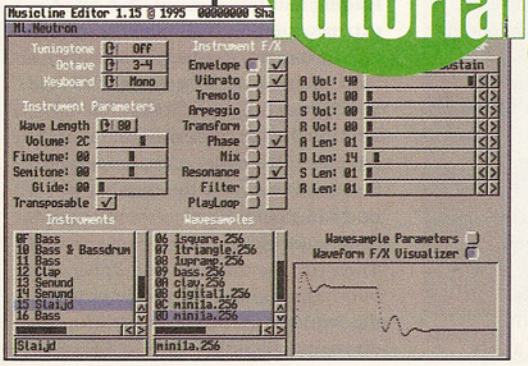






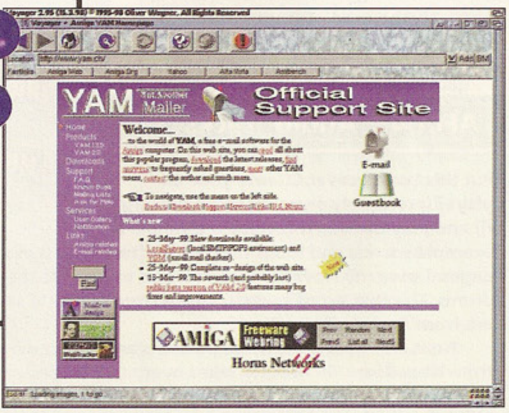
Simon uses Ben's balls in a creative manner.

NEW Tutorial



Tony Horgan shows you how to use a soft synth.



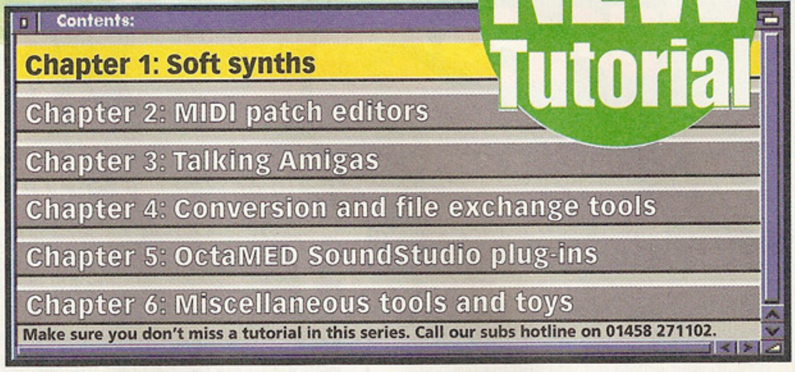


Email is the net's "killer app" and *YAM* is the Amiga's killer email package.

Synth Studies

Back with a new musical masterclass, Tony Horgan begins by turning your Amiga into a rack of vintage analogue synths.

NEW Tutorial

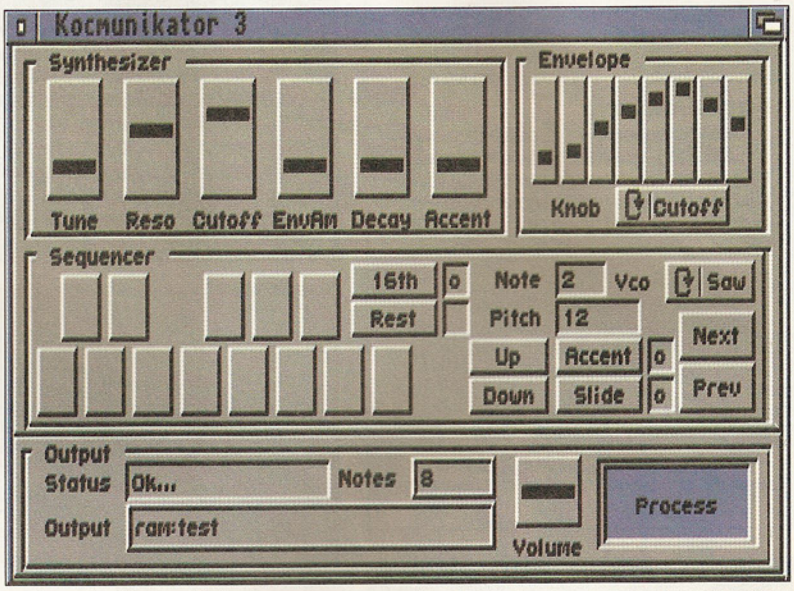


Don't you get bored of cycling through directories of the same old samples? Wish you could afford that new synthesiser that's just come on the market? What you need is a software synthesiser. Soft synths, as they're known, emulate the internal workings of conventional synthesisers with the use of software algorithms.

The best known soft synth of them all is *ReBirth383*, the TB303/TR909/TR808 emulation gizmo, but unfortunately there's no Amiga version. Still, we've got a fairly good range of alternatives, and unlike *ReBirth*, these are free. What's more, they're on this issue's CD.

> "You can use WaveBeast to render single notes of any length, or use the sequencer part to render patterns..."

Your average Amiga CPU isn't really cut out for doing this kind of thing in real-time. Although a good PowerPC wouldn't have much trouble, all of these tools are 68K-only, so that means we're looking at non-real-time synthesis. In other words, they work by rendering sound samples which are saved to disk to be used in whatever tracker or sequencer you prefer.



***Kocmunicator 3* might be a bit of a mouthful, but it does the business when it comes to spitting out those gurgling TB303 Bassline loops.**

WAVEBEAST

This is the most complete of all the soft synths we've got here. It uses a *MUI*-based interface to offer up an array of knobs and sliders that could keep you busy for hours on end. *WaveBeast* emulates analogue subtractive synthesis hardware, the kind of things found in classic old 70s and 80s keyboards. The *MUI* interface is essential and gives you a nice mix of controls that are never more that a mouse click away.

You can use *WaveBeast* to render single notes of any length, or use the tracker-style sequencer part to render patterns and loops. You also get three types of effects (an excellent reverb, delay and fuzz distortion) which can be used to process your sounds. You can play your rendered sounds directly from *WaveBeast* via *AHI*, although I prefer to have it running alongside *OctaMED SoundStudio* and just load the samples straight into that.

You don't get many example sound settings in the archive, which is a shame, but even from these it's possible to create a wide range of sounds, whether you know your LFO from your VCO or if you're just randomly changing all the settings. *WaveBeast* even has a respectable stab at generating percussion sounds.

Once you get to grips with it, *WaveBeast* will turn out to be a very useful little tool and you'll find yourself turning to it whenever you're stuck for a new sound or a gurgling synth loop.

KOCMUNIKATOR 3

It might sound like some kind of vulgar novelty telephone, but *Kocmunikator 3* is in fact a very capable TB-303 emulator. When you start it up for the first time, the panel which opens on your Workbench looks a bit confusing, and there are now pull-down menus for loading and saving. Even so, a bit of experimentation is all that's needed to get the hang of things.

It helps if you've ever used or read about the workings of a real TB-303 synth as the controls work in much the same way. To render a sequence, you first need to specify the number of notes (I suggest eight as there are only eight controls on the envelope section). Then you use the Next and Previous buttons to move through the notes in the sequence, setting the pitch for each one using the unmarked single octave keyboard. If you want a note to sound,

AFCD43: Audio Tracks

ON THIS MONTH'S CD

Put this issue's cover CD into your CD player (preferably one connected to a big hi-fi) and play track 2. This track is a simple set of example sounds and loops from the software on these pages. I used my *Novation Drumstation* to provide the drums. The first set of sounds, which comes in at 14 seconds, are from *Kocmunikator 3*.

Next, at 44 seconds, those patterns are replaced by some from *WaveBeast*. *303Tracker* takes over at 65 seconds and runs up until the end. A little reverb and delay was used on all of the synth sounds, via a Zoom 1201 effects unit.

ALTERNATIVES

You'll find a few very old soft synths lurking in a dusty corner of Aminet, such as *WaveMaker*, *Additive Synthesis* and *TRSI-Sample Maker*.

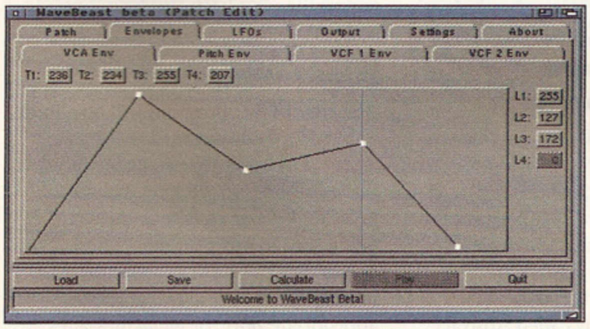
I had intended to include them in this round-up, but after spending far too long poking around these ancient, buggy, nastily constructed programs, I really couldn't bring myself to recommend anyone else do the same.



Probably the best all-rounder is *WaveBeast*, which offers plenty of synth controls, along with a sequencer and excellent effects processing.



A variety of output options helps *WaveBeast* integrate into all kinds of set-ups, and can make samples as big as you like.



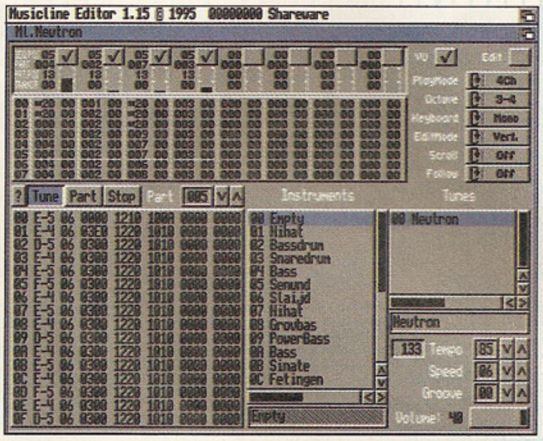
You can set envelopes for all kinds of parameters, and unlike a real synth, here you get to do it on a nice big graph.

click the 16th button. To leave a rest, click on Rest. The accent and slide buttons also correspond to the currently selected note in the sequence.

The top-left panel sets the overall tuning and filter controls, which can be varied over the course of eight notes by using the Envelope controls to the right. The VCO button switches between the more nasal square wave and the spiky sawtooth. The volume can be boosted with the volume control, which is handy for overdriving your samples. Set the output path by typing it into the box at the bottom and then hit Process when you're all set.

One of *Kocmunikator 3*'s best features is the way in which you're encouraged to enter virtually random patterns due to the rather bizarre programming procedure. This often gives much better results than trying to program specific melodies, and if you use enough resonance and pitch sliding, the resulting sounds never seem to sound off key when mixed with music that's been properly tuned.

If it makes no sense at first, do stick with it for a while – you'll find the results are definitely worth the effort.



Weening yourself off your favourite tracker is never an appealing prospect, but *Musicline Editor* does boast some very nice real-time synthesis features.

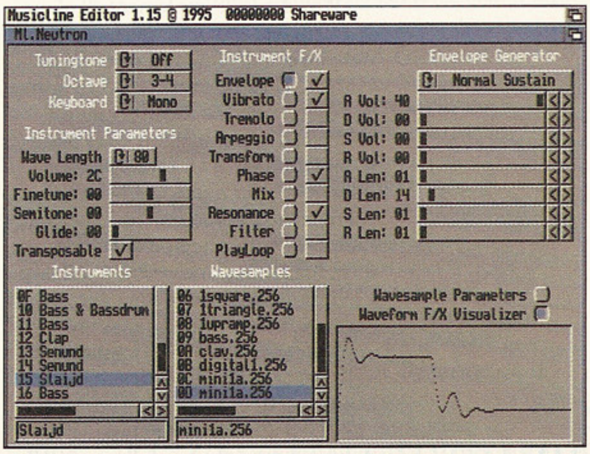
303TRACKER

Despite its quirks and half-finished state, *303Tracker* is still my favourite soft synth. It's an *AMOS* creation, but don't panic. It forces itself onto its own PAL 640x256 screen (use Left-Amiga-M to switch screens, rather than the screen-cycle gadget), but apart from that it's quite well behaved.

You get a 32-line tracker-style block into which you enter your monophonic patterns. The far left column is for the notes while the remaining seven columns are used to enter the filter and envelope parameters via tiny sliders for each note. Far from being a fiddly affair, this allows you to draw big filter sweeps onto the screen with the mouse. You can mark out ranges and then subject these to flips or even randomisation, which often leads to interesting results.

The authenticity of the resulting samples is pretty good – you'll believe your Amiga is a TB-303. However, like *Kocmunikator 3*, that's all it does, so it's as limited as the old silver box itself. The effects section is quite basic, with just a few distortion and chorus settings available – unfortunately, you won't find any reverb or delay.

Even though there are plenty of unimplemented menu options, I hear that the development of *303Tracker* is not likely to proceed much further, which is a shame. However, the author, Jeroen Schellekens, has plans for something bigger and better for the new future. I'll keep you posted about that as and when things happen.



Musicline's instrument editor lets you make a variety of different sounds, sourced from a bank of samples and manipulated with various filters and envelopes.

Q&A

Q: Do these things generate 16-bit samples?
A: Yes. *WaveBeast* and *303Tracker* both offer straight 8-bit and 16-bit AIFF export functions, although *Kocmunikator 3* is limited to 8-bit.

Q: Isn't there a tracker that does this kind of thing internally?
A: That's *Musicline Editor*. It's a nice enough tracker which features a unique instrument editor section, allowing you to take samples and give them envelopes for resonant filters and so on. It does all of this in real-time, which is quite impressive. The trouble is that it's probably not as powerful in other areas as your preferred tracker, so while you gain some features, you'll probably lose a few that you don't want to do without. It's on the CD this issue.

Q: Will we ever see an Amiga version of *Rebirth383*?
A: I doubt it, but maybe its developers would agree to a PowerPC Amiga port if they were asked nicely.

Q: I've made lots of good loops with *WaveBeast*, but whenever I activate the reverb or delay, the resulting patterns have a very obvious loop point. What can I do about it?
A: The problem is that the first one or two notes of your patterns will have no reverb on them because there are no previous sounds. By the time the pattern gets to the end, there's a lot of reverb and echo in the sample that's built up from the earlier notes. The solution is to render two bars of a loop where you would normally render one. Then you can loop the second bar, which will have an even amount of reverb from start to finish.

Program Perfection

Richard Drummond has had a change of plan and has decided to tackle BOOPSI in his guide to creating software.

Contents:

Last time around I discussed objection orientation and how we were going to decompose our problem into a hierarchy of abstractions. In retrospect, I think some of what I said was rather wool-pulling. To remedy this, I've abandoned my intended topic for this issue and instead am going to ground some of these abstractions in specifics. I had wanted to leave talking about BOOPSI until later, but it can no longer be avoided.

BOOPSI

BOOPSI stands for the Basic Object Oriented Programming System for Intuition. It provides a flexible and extensible way of building graphical interfaces. BOOPSI equips the programmer with a set of easy-to-use GUI elements which are able to look after themselves: they take care of their own rendering, refreshing, input handling, etc. BOOPSI objects can also be made to communicate with each other and update each other's states. The other attraction of BOOPSI is that it's customisable. If none of the default classes fit the bill, by the mechanism of inheritance we can modify and adapt one of the existing ones to suit.

As an example, suppose that we're creating a GUI which has, as one element, some integer value which the user can alter via a string gadget or a slider. It's important that the visual state of both gadgets reflects the current value of this integer: if the user changes the position of the slider, the value displayed in the string must be updated and vice versa.

If we were implementing this with standard *Intuition* gadgets, we'd have to listen to messages from both gadgets; when one was updated we'd have to manually update the other. With BOOPSI gadgets, however, we can interconnect the two so they automatically update each other. We don't even need to listen to the IDCMP messages unless we want to – BOOPSI shields the gadgets' client from unnecessary detail, aiding abstraction.

All the gadgets used in our program will be BOOPSI objects. Even the part of the main window which displays the text file itself will be created as a custom BOOPSI gadget. I'll discuss the specific mechanism for using and creating BOOPSI classes in more detail in a later issue.

> "Disk access shouldn't be implemented as BOOPSI methods or we'll just create an interface that's frustrating..."

BACK TO THE PROBLEM

It's worth pointing out that only those classes that we build via BOOPSI are true object-oriented classes. It isn't a simple task to implement inheritance in standard *C* so the classes which we create as normal *C* structures and functions aren't strictly classes at all. They're more properly called Abstract Data Types (ADT). The concept is similar, but without inheritance.

Why don't we implement all of our abstraction as BOOPSI classes then? Well, we could. However, when we send a message to a BOOPSI object to invoke one of its methods, the processing performed by the method takes place in *Intuition*'s time. Our windows won't respond to user input, gadgets won't get refreshed and so on, until the execution of the method completes. As such, operations that we know will take a significant amount of time, for example, disk access, shouldn't be implemented as BOOPSI methods or we'll just create an interface that's frustrating to use.

BOOPSI suffers from two major shortcomings: it lacks a full set of GUI elements (one glaring omission is a window class) and it has no built-in mechanism for font adaptivity. It isn't difficult to create a BOOPSI window class though. The window class we talked about last time will be implemented with BOOPSI. Each type of window in our application – the text window, the search window, etc – will be child classes of the window class. This means they'll inherit the basic window and will modify it by adding all the gadgets and behaviour they require.

EVENT HANDLING

The core of our program will be a loop waiting for and responding to any events that occur. By events I mean such things as the user clicking gadgets, pressing keys or an ARexx message being sent to our program. These events take the form of standard exec messages and they arrive at the appropriate port: *Intuition* messages at the window port and ARexx messages at the ARexx port.

It's possible for a process to go to sleep until a message arrives at a particular port (the WaitPort() function achieves this). However, since we have multiple ports, this method is of no use. Instead, we'll make use of the signal mechanism. Each process has 32 signal flags, 16 of which can be put to general purpose use, that the operating system or other processes can use for simple communication. These flags are booleans: a flag becomes true when someone signals it. What makes signals useful is that a process may wait for multiple signals to occur (with the Wait() function). Each message port gets a signal allocated to it when it's created. When someone sends a message to a port, that signal is flagged.

Ideally, we want to shift the

The BOOPSI Class Hierarchy

ROOTCLASS
The base class of all other classes. Not much use by itself, but it manages the OO and communication superstructure.

ICCLASS
The base interconnection class. Provides the mechanism by which objects can notify each other of changes.

IMAGECLASS
The base class for *Intuition* images.

GADGETCLASS
The base class for *Intuition*-compatible gadgets.

MODELCLASS
Allows an object to broadcast changes to multiple objects.

PROPGCLASS
Implements standard proportional gadgets, such as scrollers and sliders.

STRGCLASS
Implements standard string gadgets.

BUTTONGCLASS
Implements (repeatable) button gadgets.

FRBUTTONGCLASS
Implements a framed button gadget with centred contents.

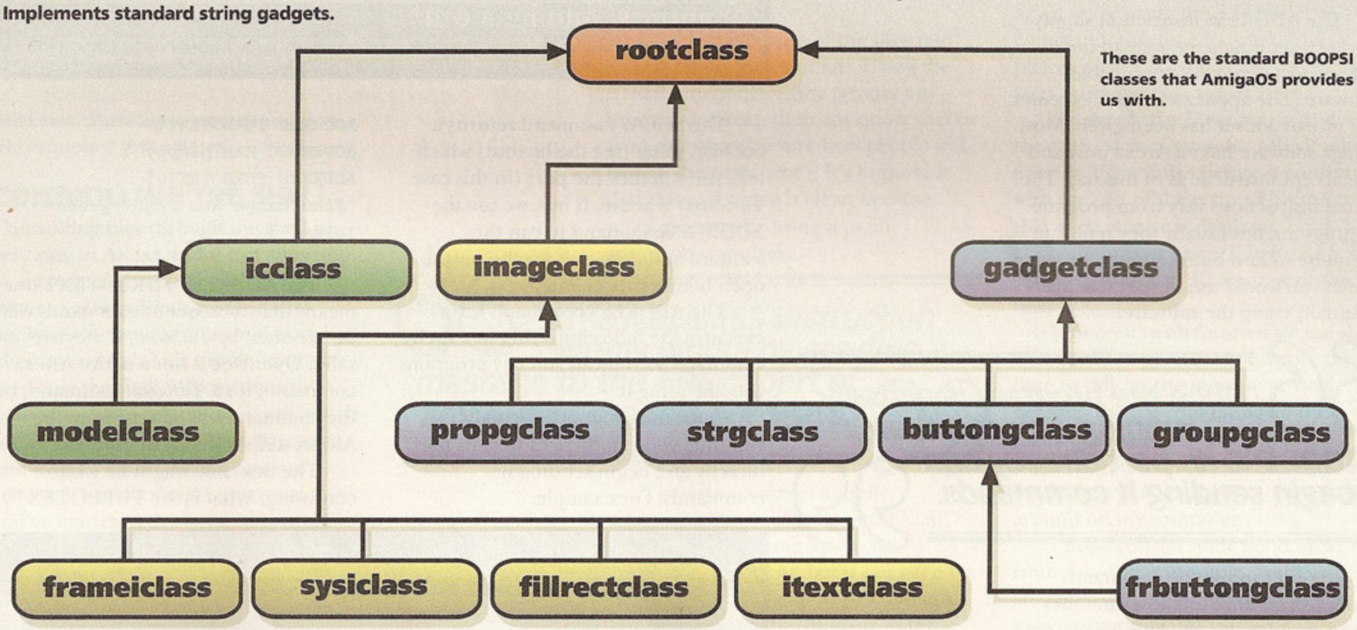
GROUPGCLASS
Allows the creation of composite gadgets.

FRAMEICLASS
Renders frames. For example, the ridged box surrounding string gadgets.

SYSICLASS
Renders the images used by standard system gadgets. For example, a window's close and depth-arrangement gadgets.

FILLRECTCLASS
Renders a pattern-filled rectangle with a frame.

TEXTICLASS
Renders *IntuiText*-compatible text.



These are the standard BOOPSI classes that AmigaOS provides us with.

responsibility for the processing of events away from the main loop – we don't want it to know about messy details such as signals, what signal is allocated for which port, etc. Window events should be handled by the window class, ARexx events handled by the ARexx class and so on.

We can do this by packaging up the event handling mechanism as a class, or ADT. We will call this, for want of a better name, the EventHandlerList. The EventHandlerList will manage a dynamic list of events that we're interested in responding to. Each entry in the list is an EventHandler, consisting of a signal to wait for, a pointer to the corresponding message port and a pointer to a function to execute when the event occurs.

This function takes care of any processing specific to a particular event, such as executing an ARexx command if it's an ARexx event.

The most important operators for the EventHandlerList will be WaitForEvents() and ProcessEvents(). WaitForEvents() will combine the signals for all the handlers in the list and puts the process to sleep until one or more of these signals is flagged. It will return a mask containing the signals that occurred. The ProcessEvents() function takes this mask as an argument. For each signal, it retrieves the relevant EventHandler entry from the list and polls the corresponding message port for messages. For each message at the port, it calls the function specified with the message as an argument.

ProcessEvents() returns a status code, obtained from the functions it calls. For example, the code that processes window events might generate a QUIT code when the user clicks the window's close gadget, and this is passed back to our main loop, which terminates.

You may think that's creating a lot of extra work, but it makes our program much more modular. The main loop becomes a lot simpler too:

```
do¶
{¶
    events = WaitForEvents(
EventList );¶
    result = ProcessEvents( events
);¶
} while ( result != QUIT );¶
```

If we want to handle more events, say file notification messages from AmigaDOS, we just add another event to the list. The main loop itself doesn't need to change.

ON THE CD?

I had intended to provide some documents describing the design issues we've talked about so far, listing the classes, their methods and attributes and so on. Unfortunately I missed the CD deadline, so these will appear next issue. Sorry!

Useful ARexx

Nick Veitch gets sociable and introduces ARexx to other programs, making use of the ADDRESS function.

ARexx was really designed to be a universal macro language, which means it needs to be able to communicate with other tasks. So far we've concentrated on how to write self-contained ARexx programs, but obviously, most of the time you'll be using ARexx to automate processes in other bits of software. One simple instruction is used to perform this task, and that's ADDRESS.

The ADDRESS instruction simply works by sending a message to the ARexx port of any ARexx-capable software. The application then executes the instructions it has been given. Most Amiga software has an Arexx port and can accept instructions in this way. The actual instructions vary from program to program, but usually they replicate menu items and buttons in the software which you would use were you actually manually using the software.

For clarity, we've added the ¶ sign in the listings to show where you need to enter a Return.

> *Once the program is actually running, you can then ADDRESS its port directly and begin sending it commands.*

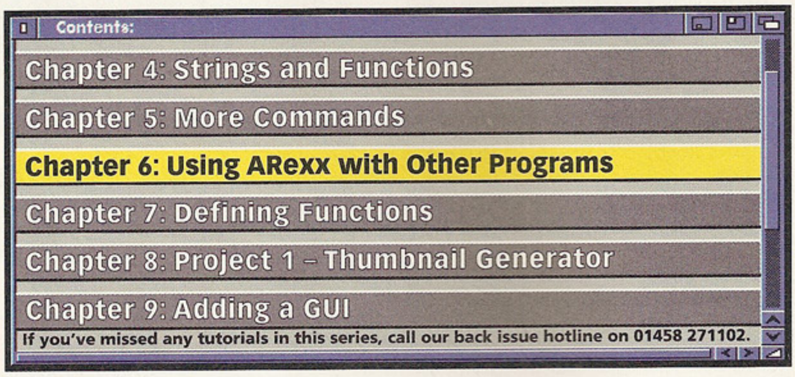
In order to use the commands properly you have to know what they mean, and for this you have to rely on the documentation which came with the program. ARexx commands are mostly well documented, with a few notable exceptions – *iBrowse* could do with more explanation of its ARexx port, as well as some useful commands.

Of course, a shell is one of the most useful programs to take control of with ARexx. You can execute any shell command through Arexx, including launching other programs, with a special case of the ADDRESS function.

In fact, this normally forms part of the setup procedure of any ARexx script dependent on another application – before your script can do anything, it should check that the program it's going to use is actually there and running.

This little code segment will do the job for you:

```
IF ~SHOW(PORTS, "TURBOTEXT") THEN DO¶
   ADDRESS COMMAND "work:turbotext/ttx"¶
   ADDRESS COMMAND "waitforport TURBOTEXT"¶
END¶
```



The SHOW command returns a boolean value (see the boxout) which tells you whether the port (in this case *Turbotext*) is active. If not, we use the ADDRESS command to run the software and then wait for the port to open before proceeding.

The ADDRESS command form executes the following string as a shell command so you can run any programs you like using it.

Once the program is actually running, you can then address its port directly and begin sending it commands. For example:

```
ADDRESS TURBOTEXT¶
ëOPENDOC RAM:ploppy`¶
ADDRESS TURBOTEXT0¶
`FindChange ALL FIND "green"
"blue"`¶
```

The ADDRESS TURBOTEXT line means that subsequent commands will be executed by *Turbotext*, if they are valid. OpenDoc is not a native ARexx command; it's a *Turbotext* command, but the command will be sent from the ARexx script directly to *Turbotext*.

The next line might be a bit confusing. What is the TURBOTEXT0

Show me

```
SHOW (option, name)
SHOW (option,,pad)
```

SHOW is a function used to examine the current resources running on your Amiga, and can be used in two ways. The first is to return a string which contains a list of the resources and the second is to return a boolean value indicating whether a particular resource is there or not.

The option can be either CLIP, FILES, INTERNAL, LIBRARIES or PORTS. Clip relates to the global clipboard, Files gives a list of the current files ARexx has opened, Internal is for examining Amiga ports which have been opened, Libraries tells you which libraries you've added using ADDLIB() (which we haven't discussed yet) and finally, Ports is the useful one.

PORTS is the option used to list the ARexx ports which are available. Every ARexx capable program will open a Port when it runs, so it can be used to check and see whether certain applications are running or not.

For example:

```
SAY SHOW(PORTS,,"0A"x)
might return:
REXX
AREXX
SWAZINFO
ADPro
```

The "0a" character is a linefeed, which just means that each port name is displayed on a new line.

To check if a port is open, you can specify a name:

```
IF SHOW(Ports, "ADPro") THEN SAY "ADPro is running!"
```

port? Well, *Turbotext*, like some other programs, can have multiple files open at once. So that it's clear which file the command is intended for, each open file is given a different ARexx port. It needs to be addressed because the final line, which activates the Search and replace feature in *Turbotext* and replaces all occurrences of "green" with "blue", will have no effect if sent to the main *Turbotext* port.

I find it really useful to issue an ADDRESS command before each command I send because it makes it easier to understand which bits of the program are actually commands for other applications, so you don't get confused as easily.

You can still use ARexx commands in your script, even if you've addressed another application. For example:

```
ADDRESS TURBOTEXT¶
DO loop =1 to 3¶
   OPENDOC FILEREQ¶
END¶
```

will cause *Turbotext* to put up an open file requester three times.

CONTROLLING THE SHELL

Controlling files through the shell is very easy in ARexx and it can allow you to achieve all sorts of useful things. When dealing with more than one application, some sort of shell work is almost essential. This simple example uses only the shell. When run with a pathname as an argument, it will search for all the JPEG files in that directory and display them one at a time on screen. It's really simple, but once you've mastered the basics you could easily use this as a basis for a more complicated image processing program, or for automatic archiving of certain files. Here it is anyway:

```
/* image viewer rexx script*/¶
/* requires directory pathname as an argument */¶
OPTIONS RESULTS FAILAT 2¶

/* Get the pathname from the argument */¶
PARSE ARG dirname¶
dirname =STRIP(dirname)¶
dirname = STRIP(dirname,"b",'"')¶

/*construct a shell command to create a file¶
  which lists all the images including their
pathname */¶
commandline = "list >ram:filelist "dirname"/#?.jpg
LFORMAT %F%S"¶
ADDRESS COMMAND commandline¶

/* loop to open the file we have created */¶
inname = "ram:filelist"¶
DO UNTIL RESULT¶
RESULT  =  open("infile", inname, "R")¶
END¶

/*read in all the filenames, and count how many we
have */¶
filecount = 1¶
DO UNTIL EOF("infile")¶
   filename.filecount = READLN("infile")¶
   filecount = filecount+1¶
END¶
filecount = filecount - 2¶

/*remember to close the file! */¶
result = close("infile")¶

SAY "now viewing " filecount " files"¶


/*now we create a loop to display the files one by
one */¶
DO LOOP = 1 to filecount¶
   SAY filename.loop¶
   ADDRESS COMMAND "vt " filename.loop¶
END¶

/* to be neat, we should delete the file we created
in RAM */¶
commandline = "Delete ram:filelist"¶
ADDRESS COMMAND commandline¶
```

The first few lines of the program get the supplied argument. Using the STRIP function, we first remove any unwanted spaces, then any quote marks (you can never be sure how people will type in the pathname). It's important that this pathname is clean because we're going to be using it as an argument ourselves.

> "The ADDRESS instruction simply works by sending a message to the ARexx port of any ARexx-capable software."

Then we construct a shell command. You could just put this all together on the same line as the ADDRESS statement, but it can get a bit untidy that way. It's up to you, though. This string is exactly the same as the command would be that you'd type into the shell. I'm using some advanced options of the shell's List command to provide me with a nice list of all the files ending in ".jpg", all proceeded by their full pathname. Type it into a shell yourself to see how it works.

Now we open the list of filenames we've created. It isn't necessary to put this in a loop, but if you were creating the list on a floppy drive or some other slow storage media, you might find that the file wasn't quite ready to be read by the time ARexx wanted to open it. Just being safe!

Once the file is open, we read all the filenames into an array and count them too. This part of the program should be familiar to you if you've been following the series. With all the files in memory we can close the file again.

Now we set up a loop to do the actual displaying. As you can see, once again we're using the ADDRESS command, this time to invoke the picture viewer *VT*, although you can use your normal image viewer here.

We supply the filename, including the path, as an argument. ARexx will wait for *VT* to finish before it continues with the rest of the script. This means that each picture is displayed until you click a button or exit *VT*, before Arexx will go on and run *VT* again with the next file.

When we're all finished we use the ADDRESS command once again, this time to tidy up the mess we've made, by deleting the file containing all the picture filenames we created at the beginning. I'm not very neat at home but I don't like leaving lots of mess lying around on my computer.

I hope you get some good ideas from this issue's example. We'll be adapting it to do some rather useful image processing for us soon.



Banging the Metal

Simon Goodwin reveals the Amiga's impressive full palette of colours.

ON THIS MONTH'S CD
AFCD43:-In_the_Mag-/Banging_The_Metal

Contents:

If you've missed any tutorials in this series, call our back issue hotline on 01458 271102.

This article explores at the Amiga's colour palette and its influence on Amiga screen modes. It shows how Commodore shoehorned 256 true colour AGA registers into the same space as 32 registers of 12-bit colour on early Amigas, and explains unique HAM modes which offer lots of colours without wasting memory.

OCS MODES

The original Amiga chipset was designed exclusively for TV and video displays, scanning each line at 15kHz. This meant a maximum of 200-odd lines in each screen. Pixel rates of 140 and 70nS offered a nominal 320 or 640 dots per line, or up to 724 with 'overscan', disabling some sprites.

The colour hardware used a hybrid device — the long, lumpy, dull black chip with pins on one side, sticking up near the video port – to define 16 levels of intensity for each of the three colour guns inside the display tube. These excite red, green and blue phosphors, giving a total of 4,096 (16x16x16) different colours, from black (0,0,0) to white (15,15,15).

Original Amigas fetch up to six bits of data for each Low Res pixel, or four bits in High Res modes. The palette converts these into 12-bit RGB colours. In 1985, standard memory was too slow to deliver 12 bits of data for each pixel at useful resolutions and the overhead of manipulating 12 bits for every pixel would have slugged display updates.

This prompted the introduction of a palette, providing indirection between the display memory (or bit planes), discussed next month, and the screen. In conjunction with the Copper, explained last month, and other custom chips, the Amiga palette can do tricks that demand far more memory and processor time on other micros.

HAM6 AND EHB

The most eye-catching feature of the original Amiga was its plethora of colours on a single screen. In those days, 'full colour' meant four or eight, often confined to certain positions, or maybe 16 in chunky low resolution. Six bit planes allowed 64 colours without placement restrictions, while an innovation called Hold and Modify (HAM) put an unprecedented 4,096 colours on one screen, allowing near-photographic quality outside graphics labs for the first time. It took ingenuity to push the frontier so far. The OCS palette contains only 32 'paint pots', though still twice as many as rivals, with more choices therein. The 64-colour mode uses one bit to select a dim variant of each palette colour, suggesting the name 'Extra Half Bright', or EHB.

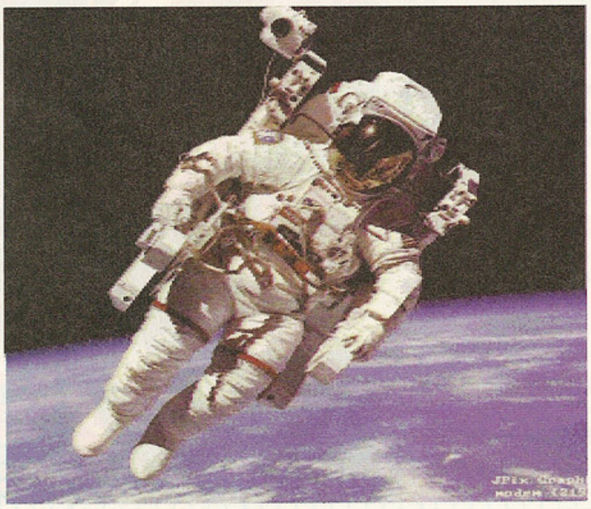
We've seen how the Copper allows the 32 basic colours to be changed progressively in slices down the screen. HAM mode goes even further, allowing new colours to be mixed on each line as the beam moves horizontally from left to right.

> "Like JPEGs, HAM displays appear to have a full colour and spatial range, yet they occupy relatively little memory."

HUMAN NATURE

Human eyes are more sensitive to the brightness than the colour of small details as the retina's mono 'rods' outnumber 'cone' colour receptors. TV encoding and JPEG compression exploit this, storing four times as much luminance as chrominance data. Small colour errors are ignored if the brightness is correct and surroundings have the expected hue. Like JPEGs, HAM displays appear to have a full colour and spatial range, yet they occupy relatively little memory.

This classic NASA shot uses HAM6 to good effect.



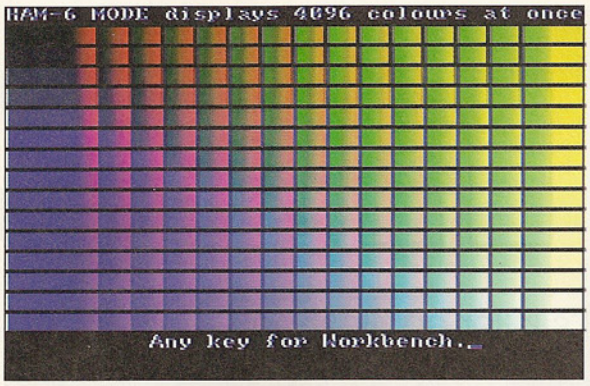
The original HAM mode uses a basic set of 16 colours, freeing the other half of the palette for unique sprite and pointer colours. Once a pixel has been plotted in a basic colour, subsequent points to the right can adjust its hue, changing the red, green or blue component independently of the other two. Thus, in an interval of four pixels, you can get from one colour to any other in the range of 4,096 possibilities. You get close in just a couple of pixels, given a well-distributed basic colour set.

A variant called SHAM, for Sliced HAM, uses the Copper to change the basic set between lines, allowing even closer matching of palette and image. SHAM is a recognised extension to the IFF ILBM graphics file format.

DEMONSTRATION

This month's demo displays 4,096 colours from *AMOS BASIC*. The basic palette registers are assigned to 16 shades of blue, so colours 0 to 15 are pure blues, 16 to 31 only change the blue component, 32 to 47 adjust red, and 'colours' 48 to 63 select 16 intensities of green. The next line opens a HAM6 NTSC screen.

Four nested loops fills the screen with colours. The outer loop makes stripes (spaced BAND pixels vertically), repeated for each value of L. The next two lines stripe 16 broad blue bands down the screen, with increasing intensity. The end of each line has colour B/BAND+16, inheriting the colour from the left, with increasing



All the Original Chip Set colours in HAM6, courtesy of *AMOS*.

AMOS 1.35 for a 4,096 colour HAM6 display

```
Rem Generate all 4096 HAM-6 colours on one Amiga screen
Default Palette 0,1,2,3,4,5,6,7,8,9,10,11,12,13,14,15
Screen Open 0,320,200,4096,Lowres : Flash Off
BAND=11 : For L=0 To BAND-3 : Rem Interval between bands
For B=BAND To 15*BAND Step BAND : Rem Blue margins
Plot 0,B+L,B/BAND : Draw To 287,B+L
Plot 288,B+L,B/BAND+16 : Draw To 319,B+L
For G=1 To 15 : Plot 16+G*18,B+L,48+G
For R=1 To 15 : Plot 16+G*18+R,B+L,32+R
Next R : Next G : Next B : Next L
Pen 15 : Print "HAM-6 MODE displays 4096 colours at once"
Locate 10,22 : Print "Any key for Workbench."; : Wait Key
```

proportions of blue as B increments. The G loop adds green to the mixture in 15 widely-spaced vertical bands.

Between these, the inner R loop interpolates 15 intensities of red. Compare the listing with the display to see horizontal blue stripes, increasing green from left to right, and rapid red ramps on top.

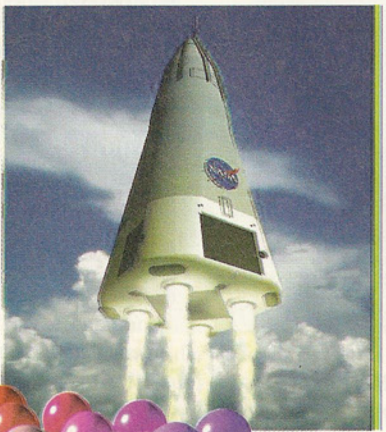
ECS EXTRAS

The Enhanced Chip Set (ECS), fitted in later A500s and all A600s, can output pixels at twice the previous Hi Res rate. This allows SuperHiRes mode, with up to 1,440 pixels per TV line – a challenge for most monitors, let alone colour TVs. It also permits a 640x480 pixel double-scan mode, suitable for 31kHz VGA monitors.

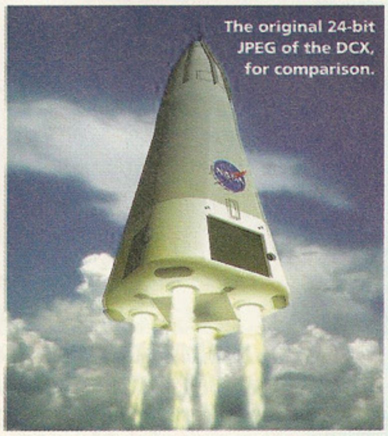
The video hybrid can't resolve all possible colours this fast, so 35nS pixel ECS modes are limited to two or four colours from a palette of just 64 possibilities. Palette accesses are interleaved to keep up, using two bits each for red, green and blue.

AGA AND HAM8

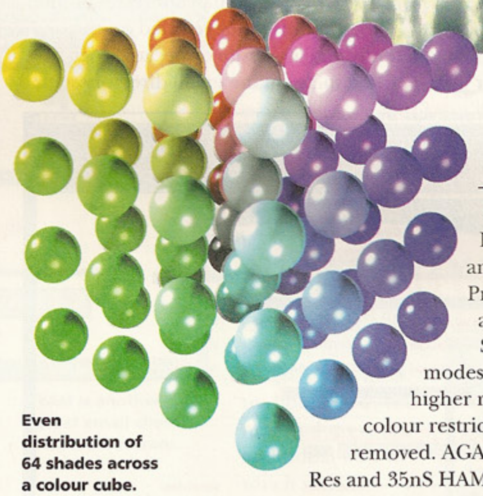
In principle, AGA adds just two more bit planes, which had space allocated among the chip set registers from the start, and expands the palette from 12 to 24 bits, using 256 rather than 32 registers. In practice, this makes AGA far more powerful while retaining almost complete compatibility with ECS hardware, in conjunction with memory speed improvements which we will discuss next month.



The DCX rocket mock-up, rendered in HAM8.



The original 24-bit JPEG of the DCX, for comparison.



Even distribution of 64 shades across a colour cube.



An owl scanned to interlaced HAM for Pandora's CD.

The AGA pixel rates are unchanged – 140nS Low Res, 70nS High Res, and 35nS for Productivity and SuperHiRes modes – but the higher resolution colour restrictions are removed. AGA allows High Res and 35nS HAM displays, and it also imposes no restrictions on the number of bit planes as the resolution increases.

AGA supports original HAM and EHB modes, although you can now have 64 or more arbitrary colours thanks to the expanded palette. However, there are still only 32 words in the custom chip area for the palette values. The AGA palette squeezes eight times as many values, each twice as accurate, into the original space.

Last month we saw the Copper toggling bit 9 of register BPLCON3 to load high and low words of the AGA palette. Similarly, bits 12 to 14 select between eight banks of 32 palette registers, enabling the full 256-colour, 24-bit range.

This compatibility kludge means a single colour change that took one MOVE on ECS needs four on AGA. You can optimise multiple updates by grouping changes for all the low words in a bank, then flip bit 9, set the high words, change banks and continue.

COLOUR CUBE

AGA adds an improved mode, HAM8, using eight bits instead of six per pixel. HAM8 comes very close to 24-bit image quality in a third of the memory. SHAM8 comes even closer. As with HAM6, the top two bits select a basic colour or change the Red, Green or Blue component, but HAM8 has six bits left over, allowing 64 basic colours and 64 component levels.

Ben's rendered colour cube shows how to evenly distribute 64 colours through the RGB spectrum. HAM8 displayers like *ViewTek* and *FJPEG_AGA* pick the colour nearest to that required from the cube and tweak subsequent pixels to improve matching.

A custom cube can be generated by analysis, moving points to match the colours in particular pictures more closely. The palette holds eight bits per component and HAM8 only changes the top six, so you can access the 16 million (256^3) true colour range, rather than the 256K (64^3) hues, by distributing 00, 01, 10 and 11 patterns in the least significant bits across the cube.

NEXT MONTH

Amiga bit planes and scrolling playfields will come under the microscope. Also, I'll be explaining some more AGA extensions, such as the FMODE bits which allow 32-bit Amigas to fetch data up to two or four times faster than the original models.

Amiga.net

Dave Cusick discusses email, the Internet's killer application.

Contents:

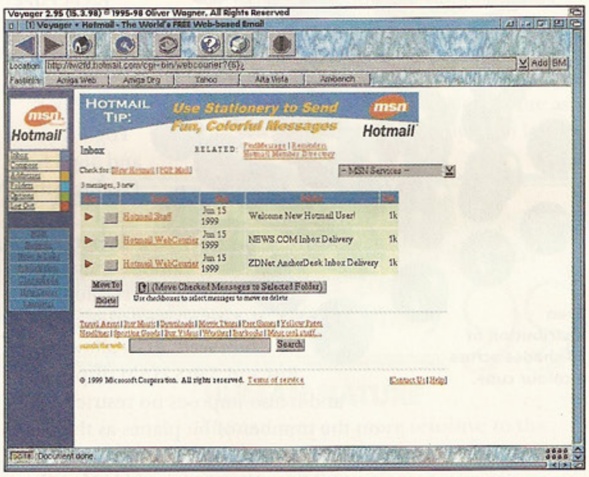
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Despite the attention the media loves to heap onto the World Wide Web, there's little doubt that the real killer application of the Internet is email. It's a unique means of communication – informal and near instantaneous, yet able to be digested at the recipient's leisure, and able to carry data files such as documents, images and sound samples (and even viruses, though you'll be pleased to learn they're all PC viruses!).

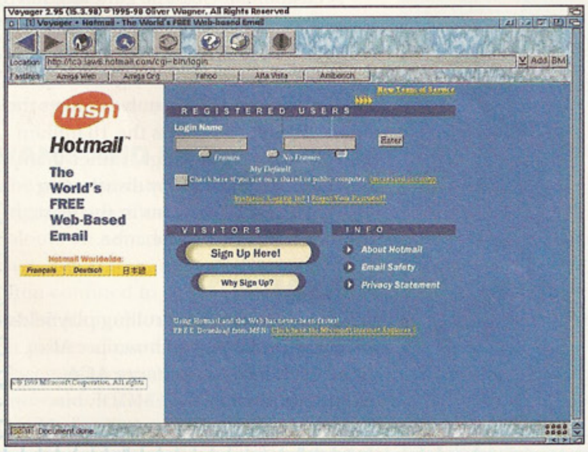
> **In Europe alone, around 20 million people are believed to have Internet access at work, and the vast majority use email.**

In the western world, email has become an everyday part of many people's working lives. In Europe alone, around 20 million people are believed to have Internet access at work and the vast majority of these make at least some use of email. Recent research in the US suggested that around 9.4 billion email messages are exchanged every day in that country alone, and the US accounts for only half of the 147 million people estimated to be online. However, in saying that, about 7.3 billion of those 9.3 billion email messages are commercial, and most of those are Unsolicited Commercial Email, or, as it's more commonly known, Spam.

One of the beauties of email is that, in theory at least, you can use it to communicate with anyone else who has an email address. You can find out all sorts of people's email addresses online, either because they're listed on the individual's website or because they're listed in an online email directory such as Bigfoot or Yahoo! People Search. Incidentally, if you've never taken a look at either of these services then you should; you might even find your own email address is listed.



You can check your Hotmail inbox from any computer in the world with web access.



It may be owned by Microsoft now, but that's no reason for you to ignore Hotmail.

The great thing about this is that it allows you to communicate with people you might never get the chance to talk with face to face. In his book *Deeper*, writer John Seabrook famously describes holding an email discussion with Bill Gates. While I've never had that dubious pleasure personally, I have certainly exchanged my fair share of emails with people I might well have never have had the chance to talk to on the telephone, let alone meet.

Apart from all that, if you find in the course of your work you're constantly having to talk to other companies' voicemail systems, you can very quickly become a big email fan. There's no doubt that as a convenient means of talking to friends and relatives around the world, email has no equal.

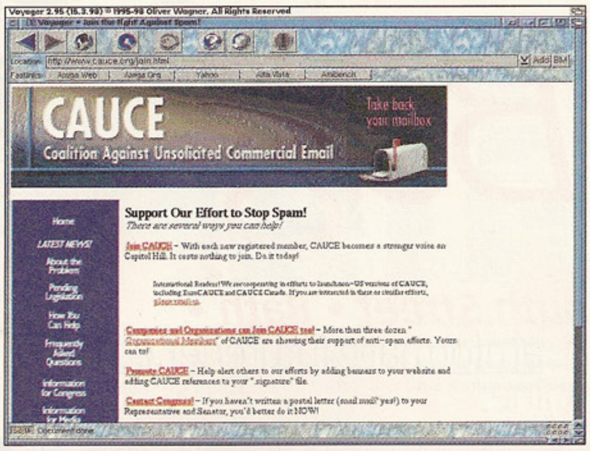
WHICH EMAIL CLIENT?

When it comes to selecting an email client on the Amiga, you're positively spoilt for choice. There are literally dozens, ranging from the age-old *Elm*, which in the heady days of the early '90s was pretty much your only option,to ultra-slick modern alternatives like *YAM* and *Microdot II*.

Both of these packages let you maintain email address books so you don't need to remember the addresses of all your friends and acquaintances. Both also allow you to sort your incoming email into folders based on, for instance, the sender's name or the message subject line, so it's easier to keep track of. You can also instruct the programs to delete certain messages without you having to read them. This is a real boon if you regularly receive spam from a particular address, or with particular words in the subject line.

Incidentally, a little tip if you're a *YAM* user: when you send email to people who don't use the program, don't use *YAM*'s custom horizontal rules and other layout options. They're non-standard and in other email packages they'll appear as "<tsb>" and other such meaningless symbols, which won't impress anybody very much.

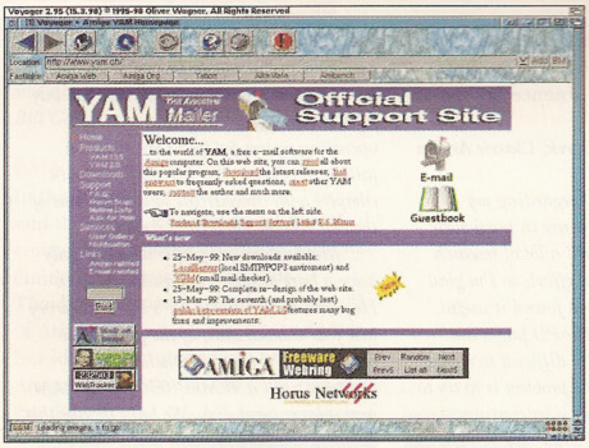
YAM and *Microdot II* both support ARexx, and for *YAM* in particular there are literally dozens of scripts you can download to further enhance the functionality of this neat little email client. Take a look at Kai's ARexx scripts



If your inbox gets regularly inundated with Spam, the CAUCE website offers useful advice on dealing with it.

archive; it hasn't been updated for an eternity but there's plenty to download.

Both *YAM* and *Microdot II* are POP3 email clients. POP3 (the letters stand for Post Office Protocol) is a system used by ISPs to deliver email; in the old days, some ISPs had you using SMTP (Simple Mail Transfer Protocol) instead, but nowadays POP3 is almost exclusively used, which is a relief because it's far less hassle to deal with.

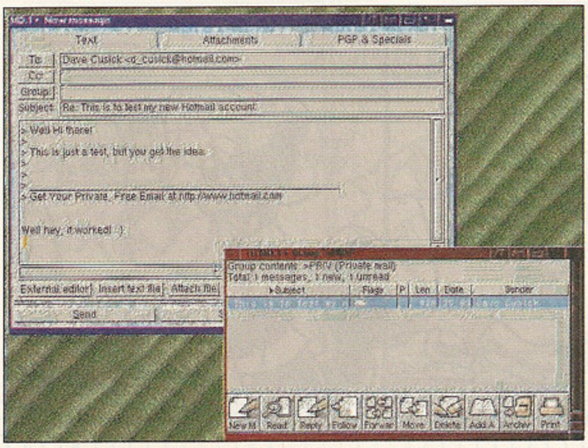


YAM **is another great email client, and it's freeware.**

The good thing about POP3 accounts is that, generally speaking, you can access them using any POP3-compatible mail client on any machine with access to the Internet. For instance, if you're forced to use a PC at work, you could configure *Outlook* to check your personal email account.

The only exception to this is if you've taken the cheap route onto the Internet and opened an account with a free service provider – you might find you can only check your account when you're online via a direct dial-up connection to them. If you can access your account via another connection, more often than not you'll be able to download your incoming messages but not upload any outgoing mail. This is all to prevent abuse of the free services by unscrupulous email Spammers.

Microdot II **is one of the best email clients available on the Amiga.**

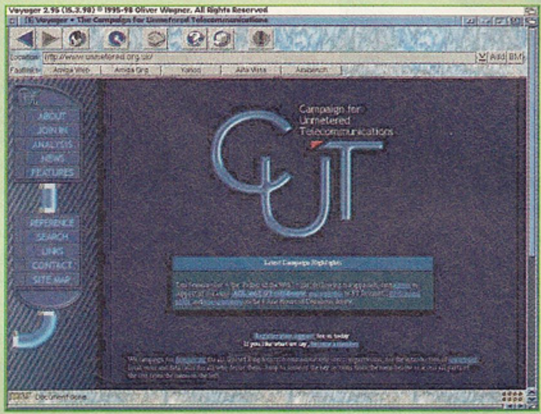


FREE CALLS IMMINENT?

Following the Europe-wide Internet strike day on June 6th, it seems as though the campaign for an end to metered net access telephone calls may be about to bear fruit, although it's service providers rather than carriers that appear to be setting the pace.

A number of providers, including AOL and BT Internet, have begun offering their subscribers free access at weekends as part of the standard monthly flat rate service. At the moment, these services are only intended for subscribers with special PC-only software (although that hasn't stopped some folk), but several other companies look certain to be following suit.

Since FreeServe revolutionised the ISP marketplace last autumn, the larger traditional fee-based service providers have been maintaining that they would welcome free net access calls, and there's certainly little doubt that we, the paying net users, would benefit from them, so the next few months could be very interesting...

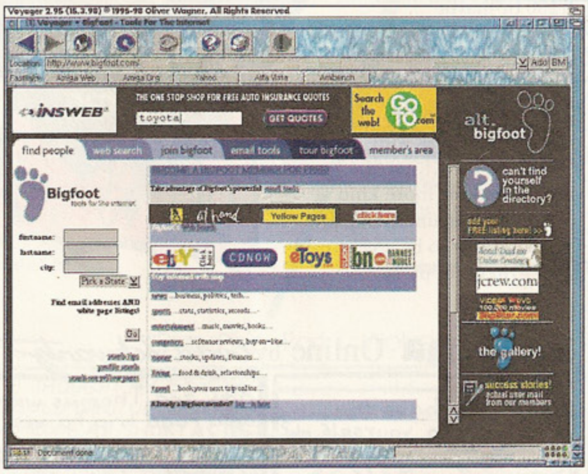


For the latest developments in the battle for unmetered local telephone calls, visit the CUT website.

ALTERNATIVE EMAIL ACCESS

On the other hand, if you have an account with a traditional ISP, you may find there are additional ways in which you can access your email, without the need to configure a POP3-compliant email client (which let's face it, is something of a chore, particularly if you're trying to do it on a Wintel system). For instance, my ISP, Demon Internet, provides a Webmail service which enables you to check your email on the web, so in theory you could check your email from a cybercafe on the opposite side of the globe.

If your ISP doesn't offer something similar, don't despair as there is an alternative: you can open a web-based email account with a company such as Hotmail. You'll have to do all your reading and composing of email online, but you'll be able to do it wherever you can find net access and a browser.



The Bigfoot email directory is worth checking out if you want to find somebody's email address.

CONTACTS

Bigfoot – http://www.bigfoot.com
Yahoo! People Search – http://people.yahoo.com
Hotmail – http://www.hotmail.com
Coalition Against Unsolicited Commercial Email – http://www.cauce.org
Campaign for Unmetered Telecoms (CUT) – http://www.unmetered.org.uk
Kai's ARexx Archive – http://www.sci.fi/~kajun/scripts.html
Microdot II – http://www.vapor.com/microdot
YAM – http://www.yam.ch



MailBag



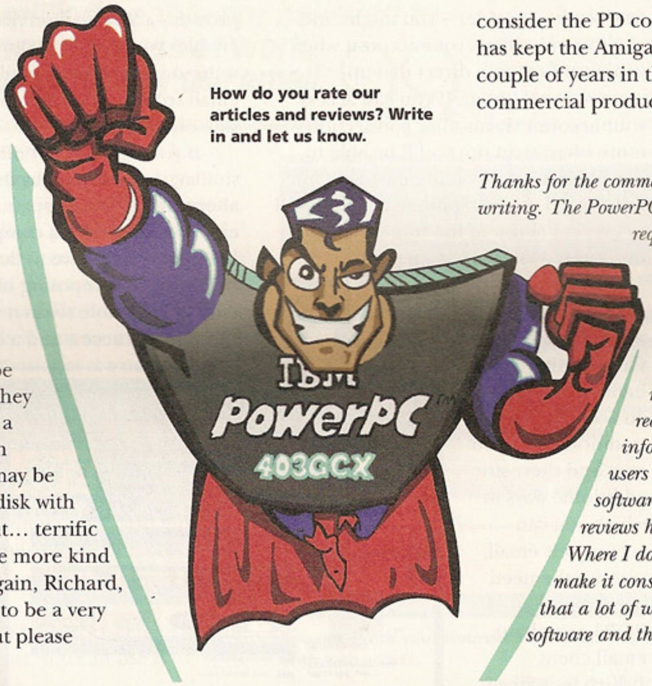
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SPARE US	SEND US
• Requests for C4D keys – it's been a year!	What you want to see in OS3.5 •
• Boring letters – keep your writing sparky without insulting anyone!	What you want to see in a new Amiga •
• Questions asking why Amiga aren't advertising on ITV yet	Biting comment and incisive wit •
• Letters asking for Mark's job	Suggestions for how Amiga should ensure the Amiga's future •
• Technical questions which should be addressed to Workbench	General questions you want answered (not technical ones – that's what Workbench is for!) •

PROS AND CONS...

I recently read your PowerPC article and found it very informative and well written. 10 out of 10. I learned a lot and I'm an Amiga dealer! Your PD reviews, however, are out of tune. I think when you're reviewing a disk which costs £1 or less you have got to take the price into account. What can you buy for £1 these days? Also, please consider that individuals spend weeks or months of their time 'unpaid', working on a program purely for the love of the Amiga. Also, there are lots of Amiga users out there for one reason or another who have a basic A1200 or maybe a hard drive. They may even have a 4MB expansion (wow!). Cash may be tight, £1 for a disk with a program on it... terrific value. Please be more kind to PD. Once again, Richard, I consider you to be a very good writer, but please consider the PD comments above. PD has kept the Amiga alive over the last couple of years in the absence of commercial products.

Derek, Classic Amiga



How do you rate our articles and reviews? Write in and let us know.

Thanks for the comments regarding my writing. The PowerPC feature in particular required a lot of research and effort, so I'm glad you found it useful.

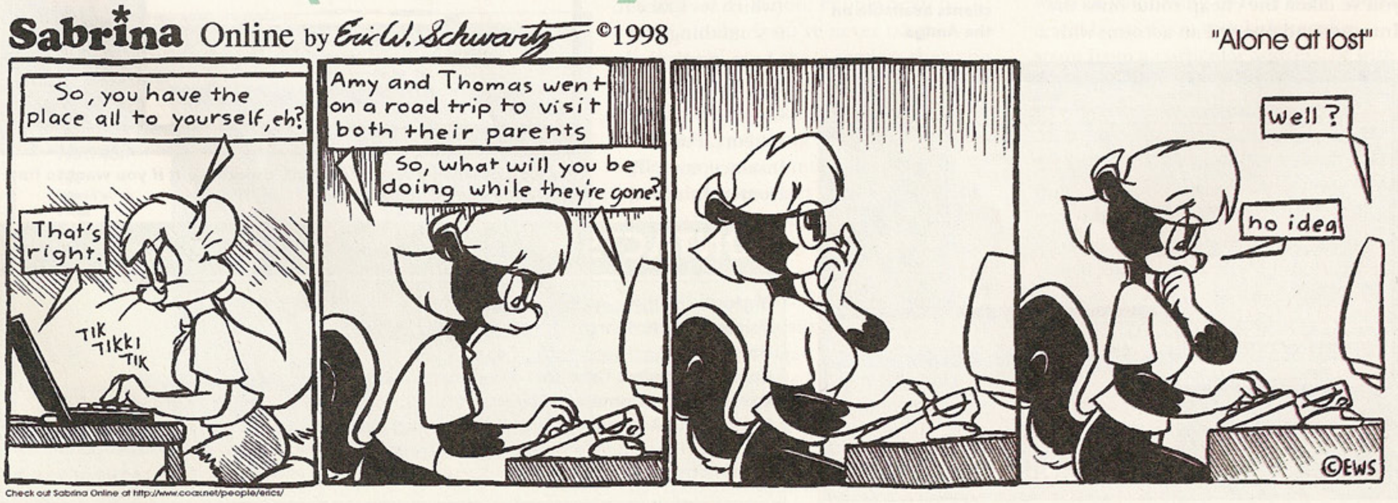
The PD pages are also difficult to write. The problem is to try to make it interesting to read, while still being informative to both the users and developers of PD software. I do not think my reviews have been too harsh. Where I do give criticism, I try to make it constructive. I appreciate that a lot of work goes into writing software and that is why my comments are, in the main, meant as suggestions as to how these products can be improved.

As for the question, what can you buy for £1? Well, you can get a complete operating system for less: Linux. *It's a fallacy to suggest that free software can't compete with commercial software. Some of the best Amiga software is freeware.*

Maybe there are people who still only have a bare or poorly expanded A1200. However, the results to AF's Reader Survey last year showed that, of the people who responded, the average machine was equipped with a 40Mhz '030, 8MB RAM and a large hard disk. We have to take this specification into account when reviewing any products. If we were to aim at the lowest common denominator, we would be ignoring the progress that the Amiga market has made in the last few years. (Richard Drummond)

JUST A THOUGHT...

Just a quick thought to share with other readers. Given the apparent lack of



Check out Sabrina Online at http://www.coaxnet/people/erics/

support for the Amiga platform by major companies, surely the Amiga's survival is due to the 'homebrew' mentality of its users.



The homebrew and hacker mentality has certainly helped the Amiga survive.

Look at the articles you've run in the past, such as the hardware conversions and how to sign up to ISP's who only support Wintel users. Look at the Hit the Metal tutorial currently running – you never see that in mainstream PC mags. Finally, any chance of you running a feature showing how to use the Lego Mindstorms kits with Amigas?

Steven Deaville, via email

Indeed. Also, with the bewildering variety of hardware on offer for the PC, it makes it quite difficult for PC mags to be able to offer definitive advice like we can. The other advantage Amiga owners have over PC owners is that they're big fish in a small pond – they have access to people at all levels of the Amiga industry. You can't see a PC end-user being able to a) send an email to Bill Gates, and b) get a reply.

A1200S FOR SKOOLS

I read not too long ago in your magazine about people getting Amigas into the education system. Well, put another pin on the map for Staffordshire's Blake High School! Equipped with nothing more than a screwdriver, a grinder and a plastic fish, we've set up a fully functional A1200T. The school had been looking for an Amiga for a while for A-Level Media Studies. We eventually got one for £30 from an ex-student and used a redundant server tower that the school owned to tower it up.

We towered it up the same way as Eyetech convert PC Server Towers into their EZ Towers, making various adjustments. The Amiga is equipped with 34MB RAM, '030, 400MB hard drive, 2x external CD-ROM, soon to have a fast internal IDE CD-ROM. Wow! I would advise anyone to encourage their school or establishment to do the same as having a machine with such amazing capabilities is a commodity in itself. If you have a spare server, like we did, then you'll save yourself quite a bit more than by buying Eyetech's pre-made EZ Tower. Media Studies will benefit greatly from the new venture, using *Scala* to make titles, etc, for video productions, and *Deluxe Paint* and *Cinema 4D* for animation purposes. Now the only problem is where to put the plastic fish...

Dave Preece, via email

It's good to know that not all schools are blinkered in their thinking about computing. It's sad, but I dare say that there are a lot that just buy whatever their local authority tells them to.

MISTAKEN IDENTITY

In the Mailbag section of issue 125 you said that Janet Reno had said her ideal computer would be an Amiga with Mac emulation. It was actually Gail Thackeray, Assistant Attorney General of Arizona who said, when asked what her ideal computer would be: "An Amiga 2000 with an IBM card and Mac emulation! The most common hacker machines are Amiga and Commodores. And Apples." It's hardly a great victory for the Amiga – she wanted one so she would be able to check the vast amount of pirate disks available.





Gail Thackeray was responsible for Operation Sun-Devil, the "Hacker Crackdown" of 1990-1991 in the US that resulted in the US Secret Service busting Craig "Knight Lightning" Neidorf (co-editor of *Phrack* magazine), Steve Jackson games, Prophet, Urvile and Leftist of the Atlanta Legion of Doom and The Mentor, over a stolen document regarding the Bell 911 system. The failed law suit against Neidorf resulted in Thackeray losing her job.

On a lighter note, am I alone in thinking Jim Collas bears a striking resemblance to "Huey" Paul Jones from the Fun Lovin' Criminals?

Tom Waddington, via email

Ah well, I'm sure you're right – it's actually been a fair while since I read Cuckoo's Egg. *As for Jim Collas, how come he gets to look like one of the Fun Lovin' Criminals where people just say that I look like David Baddiel or Joe Mantegna?*

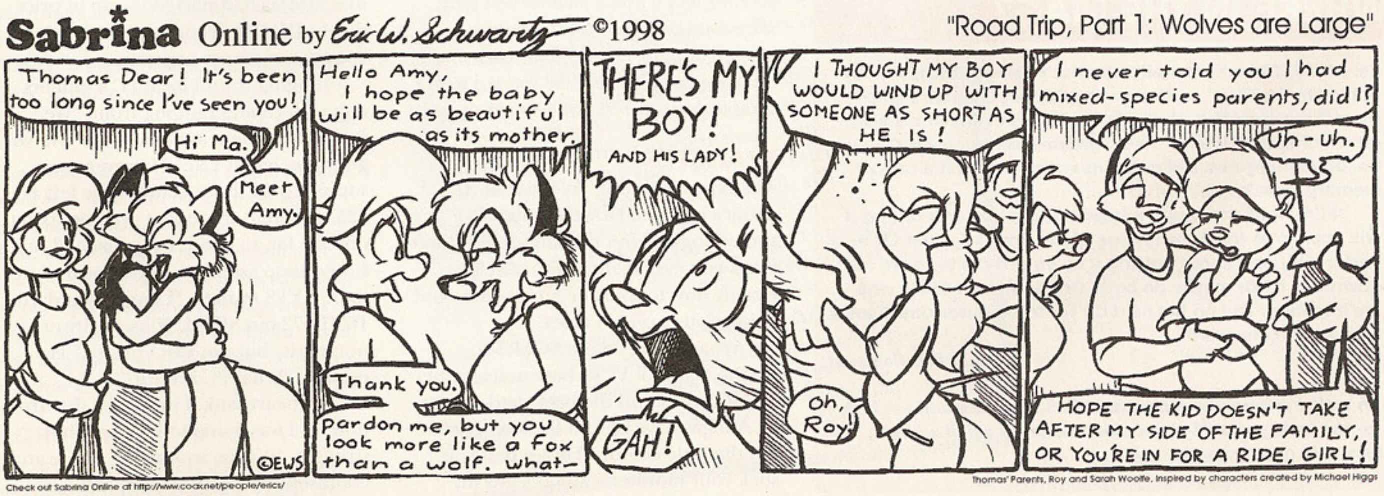
Spot the difference: one's a fun lovin' criminal, the other is head of Amiga...

GAMING GRUMBLES

I have a couple of ideas how to make your magazine better. First, you could release a game per year. Most games are clones of other games, like *Doom* and *C&C*, yet there aren't any good car games, beat-em-up games, sport games, etc. You could do a game competition to find unseen games – there shouldn't be any commercial challengers – and then release the competition winner free on your magazine cover CD. If the magazine buyer want to play the game, he or she has to buy a code which makes it work, and that's how the game maker gets a profit and you get the glory.

Secondly, most game makers are seeking highly selling PC games to plagiarise and they don't think about what kind of games we don't have. The first *C&C* clone will sell well, the second not so well and the third... The Amiga doesn't need millions of the same kind of games. Finally, *CU Amiga* were very honest as they didn't say that every Amiga game was good just because it was an Amiga game, like *Virtual Carting II* (sic) which scored only 30 out of 100. I

Continued overleaf ➡



Check out Sabrina Online at http://www.coaxnet/people/ericS/

Thomas' Parents, Roy and Sarah Woolfe, inspired by characters created by Michael Higgs

don't want to buy a game just because you say it's good.

Ismo Utriainen, via email

Sorry, but I thought part of the point of buying the magazine was to see what we thought of a particular bit of software or hardware. Also, your idea about putting a game that one of our readers has done on the CD once a year is a great one, and that's why we already have a Reader Games section once an issue (usually), not just once a year.

SPITE

Your issue 125 was so much more upbeat than recent offerings, possibly due to your recent interviews with the 'powers that be'. Anyway, thanks, it was a good read. Now here are some of my humble offerings.

1 OS3.5 should be available in three ways: a download, on floppy and on CD-ROM. I got flamed for suggesting this on the net but this way it will be available to a much wider consumer market. Loads of PC software is available this way.

2 The Amiga's future. Nothing short of an earthquake would make me invest in the new box – if it ever arrives. I don't think I'm alone either. For all the work which is PC specific I use a PC which, because of the two-year wait, I've invested heavily in. I'm not about to ditch it.

3 Suggestions for the mag. Keep supporting the A500 and A1200 as here lies the Amiga lifeblood. I for one love to squeeze the most out of a small system. Also, more hardware hacks – for example, the MOD for making accelerator boards compatible with all motherboards. How about conversions for PC-specific joysticks and consoles to Amiga configuration? These are just ideas. Your magazine could achieve cult status as the finest repository for Amiga mods and hacks.

OS3.5 is unlikely to be available for download due to its size and the fact that it isn't free.



4 Postscript. A friend of mine uses a Spectrum to download weather satellite pictures and another uses an Atari (remember them?) for music, using their version of *Cubase*. The point is that just because something isn't in production doesn't stop it being a lot of fun – I'm still trying to complete *Competition* on my Sharp MZ700.

You've stayed in business in spite of Gateway, not because of any support from them, so keep looking to yourselves for inspiration and your great mag will continue.

Will Halligan, via email

Amiga have already stated that the only way OS3.5 will be made available is on CD-ROM, especially since they want to put loads of third party software on there. I suppose they could offer it for download, but OS3.5 isn't free and it would probably be a fairly large download. Your point about not wanting to ditch your PC is an interesting one – most people would say that they didn't want to dump their existing Amiga setup.

MORE LINUX

In reference to a query by Jared Holdcroft in *AF121*. Unfortunately I was unable to read the review of *RedHat* you had in February so I can't comment there, but as a System Administrator and Network Consultant by profession, I have tried it and can't say I'm pleased.

However, the *Debian* distribution has been actively supporting and including, with core releases, the 68K version. This has progressed so well and has so much support that the latest versions will even boot into the installation program direct from CD. As well as that, you have the well known and most complete, secure and up to date distribution of software that *Debian* is known for – well over 2,250 packages precompiled in the nice *Debian* package format. Due to the success and support, they're also distributing it for PowerPC and Sparc processors.

Steve Hardman, Perth, Western Australia

The Linux *scene is hard to keep up with. Not only are there several different versions of* Linux *so it's hard to know your* SuSe *from your* RedHat *and your* Debian *from your whatever, it's also hard to keep them up to date. I'm sure that Schatztruhe chose* RedHat *as it was the one with the highest profile, and what you may not know, since you didn't see the review, was that they offer technical support on it.*

WHERE IN THE MAG?

Re: *AF125*, CD version. Neil Bothwick's Using HTML is usually in the "In the Mag" section on the CD, but Chapter 9 wasn't there. I searched the whole CD but it wasn't anywhere else either. Chapter 9 was in the magazine but not on the CD. Go on. Do tell why not. Did gremlins strike, or was it a case of memory lapse?

If I'm right and it was missed off, can you ensure that it will appear on the August issue of the Amiga Format CD or better still, how about putting it on your website so we can download it? Or maybe do both. On the site for those who are impatient and on the next CD for those unfortunate souls who aren't connected.

Jim Buckley, via email

***Ah well, I'm sure you can contact Neil Bothwick and ask him for the code yourself. If you don't have his email address, here it is:* neil@wirenet.co.uk**

TRANSFER

Thanks for printing my letter in *AF125* about *FreeScreen*. However, there's something I didn't mention that I don't think you ever mentioned, which is exactly how to transfer Amiga films and animations to video tapes.

What you need is a SCART-to-Phono lead. All VCRs have at least one SCART socket on the back, and almost all Amigas have phono sockets. These are the little coloured holes that you stick your monitor's audio leads in. Don't worry, you won't lose the sound! It'll just come out of the TV instead.

The yellow phono socket is for the video phono plug, the white one for the left audio plug and the red one for the right phono plug, if your VCR has stereo sound. If that's too confusing, just match up the colours. You then want to switch the VCR to 'AV' and the TV to its normal video channel. The VCR is now ready to record whatever the Amiga is showing. If you don't print this letter, you should mention this somewhere in the mag anyway. It took me ages to work out how to transfer my animations to video.

Stu MacDonald, via email

Not all Amigas have them Stu – the A4000 certainly doesn't have a CVBS out port. However, as you rightly say, a lot of videos have SCART sockets, and a number can accept the RGB signals that the Amiga produces, so getting a 23-way video-to-SCART lead would also resolve the problem.

NON-COOKIE MONSTER

You ought to mention in your advert for afb that we're required to enable cookie use. I have cookies switched off and don't wish to use them, and so have not subscribed. If your advert had mentioned this requirement, I wouldn't have attempted it in the first place.

Victor Bell, via email

That's a shame Vic, you're missing out on quite a feast. The reason for using cookies on the afb site is to make sure that you don't read messages you've already looked at, that's all. You can receive the messages via email and never use the website again if you wish. If not, I guess you'll be limited to reading them off the CD.

OMEGA?

Reading Tony Horgan's column about computer shops, I'd like to say that my experiences can only confirm everything he said. A little while ago, I wanted to upgrade my memory. Sounds simple enough doesn't it? This entailed replacing my 4MB SIMM with a 16MB SIMM. It was about this time that SIMMs had started to rise in price due to DIMMs becoming the most common memory upgrade.

Ringing round local PC suppliers met with replies ranging from, "We don't stock them anymore," to, "We've got some left at £35." However, one supplier said they had a couple left at £25, so I went there that evening to get one. So far, so good. I approached this suited shop assistant, who appeared not to be a YTS trainee. "I want a standard 16MB, 72-pin SIMM, 60ns. Parity or non-parity but not EDO please." He replied, "What PC is it for?"

My heart sank. I just knew that from now on I was going to have a uphill struggle. "It's for an Amiga." Pause and confused look, followed by, "An

AD STRATEGY

Looking through some old *National Geographic* magazines, I came across two Amiga ads by Commodore, one from November 1985 and one from March 1986. They might shed some light on the subject





of which came first, the chicken or the egg... er, no, I mean the Boing Ball or the Tick. I've included both ads for you to see.

Mathias Norway, via email

I guess no-one will complain if we air them once more. As you can see, Commodore weren't always clueless about marketing, although what the CD³² ad with the nutty professor was all about, I have no idea.

The Boing Ball versus the Tick debate goes on. Doesn't anyone have any totally new and original logos? If so, send them in to us!

Omega?" "No. An Amiga. Amiga 1200." He then shouted out to his colleague, "Do you know anything about… Ameegas?" Several spotty little oiks in the shop looked up and smirked as if I'd just announced that I like to dress in women's underwear (which for the record, I don't… usually.)

Hardly able to contain his obvious amusement, "Er… I saw one about 10 years ago. No, sorry. I think you'll probably need a special one."

That last statement alone was enough to make me want to punch his lights out. Instead, I just left with my tail between my legs. I felt as if I'd been made to look like some technologically backward halfwit in front of an audience of jeering PC snobs. I eventually got my SIMM from an Amiga mail order supplier. I learned that day that Amiga are going to have a almost vertical slope to climb if the word "Amiga" is ever going to stop being the "Bros" of the computer world.

Wayne SS, via email

I think that the first solution to your problem would be to simply tell the assistant that since you obviously know what you're on about, would he please just serve you with what you want. The second is that although you pay a premium for supporting Amiga dealers, they do know what an Amiga is and won't laugh you out of their shop, or off their mail order line.

MORE PAGES?

Your article in issue 125 about the interview with Jim Collas has made me feel a lot better about the Amiga situation, as, in no fine words, I was feeling pissed off. Now I feel okay and it has made me have more faith in the Amiga. Even though I can only read what you've printed, it must have been an uplifting experience to have been there at Heathrow to listen to him.

I think we're at the start of something big and we should all be happy with ourselves that we've stuck with our Amiga's through these lean times. I look forward to the next six months or so with enthusiasm. One last thing – two of the best bits of your mag are these pages and Workbench, so any chance of enlarging it? Apart from newsprint, not much time and effort or money is involved – we do all the work – and it'll get the page numbers up a bit.

Ken Walsh, via email

As I've said before, editorial pages in the magazine are dependent on advertisers, so increasing them also relies on getting more advertising pages. However, if we could stop selling floppy issues to people (because they've all gone out and bought CD-ROM drives), we'd have four extra pages to play with.

I hope you like our new Workbench pages. Starting this issue under the watchful eye of Simon Goodwin, they are very closely tied in with the CD.

FREESERVE SUPPORT

I've just read your letters page in issue 124 and have to disagree with Jonathon Hayes regarding Freeserve. True enough, when they first started up they were slow and unreliable, to the point that I flew around the web signing up with free ISPs left right and centre, eventually settling on Connectfree. However, since then Freeserve have improved no end. I'm consistently connecting first time, at higher speeds than the others, and am getting consistently good download speeds. They're the only email provider I use, since the others seem to be unreliable or incompatible with the version of *YAM* I use.

Their news service (and ftp, etc) hasn't failed for ages, and I've returned to using them as my main ISP. And, of course, I have them as my Best Friend on Friends & Family, so I only pay 80% for the calls as well. If Jonathon isn't a happy bunny, I'm hopping with joy. Don't write them off yet. Things are getting better.

Steve Hargreaves, via email

FreeServe have their problems like any free ISP, only they do seem to be recovering from the fact that in no time at all they went from no subscribers to however many million it is that they now have. However, I'll say what I've said all along, which is that you get what you pay for.

MY GAME, OR YOURS

I have recently gone online and been given 20MB of web space. On *AFCD20* you kindly published a game, *German Dice*, in the Reader Games section which I had written.

Am I allowed to put this game on my website for general downloading, or have *Amiga Format* got the copyright on this software?

Roger Buckley, via email

Just because you sent it in to us, Roger, doesn't mean to say that you've also assigned us the copyright to your game, so you're free to do with it as you wish.

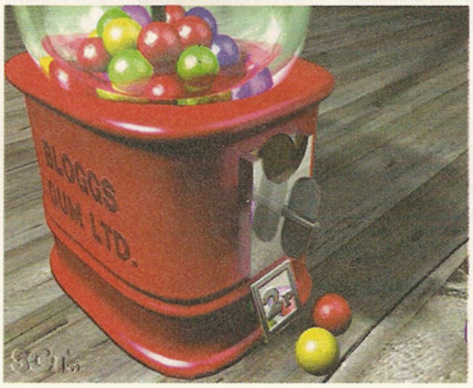
The Gallery

ON THIS MONTH'S CD

AFCD43:-ReaderStuff-/-Gallery-

After last month's spectacular efforts, **Ben Vost** is more keen than ever to take a look at your artwork.







GumBall2, RadRoom and LaunchBay by Stephen Thornber

Stephen makes a good showing with his renders. He says he spent an age on the launch bay pic, and it really shows what you can do with *Cinema 4D*. Even the bog-standard human model works well in silhouette, as the aliens in the airlock. His RadRoom picture also shows off *Imagine*'s depth of field functionality, although this might not have been the best image to use it in, especially since it doesn't affect the image map outside the window.





CubeWorld and TickTack by Colin Campbell

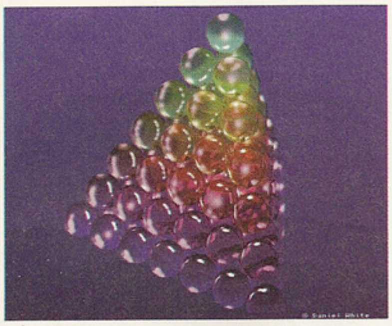
There are definitely a couple of nice ideas here Colin, but you should really build on them, rather than just doing variations of them for The Gallery. How about sending us a much more detailed version of CubeWorld?



Mage by John Bankier

It's nice to see hand-drawn images in The Gallery section. Far too often we get too many unimaginative renders, but this picture shows the kind of life you can imbue an image with by using strokes of the mouse.



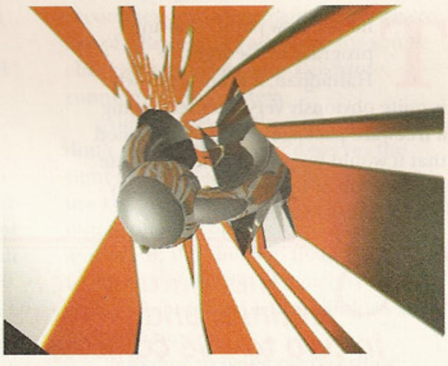


Droplets by Neil Malton

Again, Neil's image isn't the most imaginative composition we've ever had in The Gallery section of the magazine, but it does show off *Imagine*'s excellent way of dealing with transparency and refraction.

Marblelous by Daniel White

Daniel's image isn't exactly complex or difficult to achieve, but it still creates a nice effect (on the screen, anyway – it won't look as good on paper because of the difference between print and cathode ray).



Ringritethruit by Paul Hill

We liked your images Paul, particularly the Boolean one (although Richard here says that it's nothing to do with Boolean algebra, but rather sets – I'm on your side on this one), but they're all a bit small and wouldn't have much impact on The Gallery pages.





SunSetCar (right) and Alone (above) by Matthew O'Neill

We liked both these pictures. Alone is a very strong composition – it's just a shame you didn't include a readme file so we could know how you achieved some of the effects, such as the volumetric lighting on the picture above.

CONTRIBUTIONS

If you'd like to enter your work (and it should be only your work!) for the Gallery section on the CD and the pages in *Amiga Format*, read the Reader Submissions advice on the CD (you can find it in various places) or simply make use of the form from the CD pages of this magazine.



Serious disk



AMIGA FORMAT

Errol Madoo brings you a new paint package, the most useful AmigaGuides ever, a new virus killer and some other useful utilities thrown in for good measure.

Perfect Paint

This is a new paint/drawing program by Georges Halvadjian, a French guy who is quite obviously very talented. Being a freeware package, I initially assumed that it would be pretty basic and quite possibly full of bugs, but I was utterly wrong. I played around with *PerfectPaint* for several hours and only managed to crash it once, and even this wasn't really a crash, more of a system freeze that could have been the result of too much multitasking. Anyway, on with the show…

> The feature list is almost infinite and includes drawing in two to 256 colours, antialiasing, spare page…

The feature list of *PerfectPaint* is almost infinite and includes drawing in two to 256 colours, antialiasing, spare page, stencil, multi-level undo, text with antialiasing, bevel and outline, animation support and extensive ARexx support. Its interface is clean and although some of the buttons may be a little different in appearance to the more common paint packages, it should be immediately familiar to anyone who has used an Amiga paint package.

The floating toolbox features all the standard tools, such as the freehand drawing tool, the line tool, the circle tool and so on, but it also has some "new" ones like buttons for direct access to the vector drawing, effects, special tools and the ARexx script selector. Clicking on the ARexx button with your right mouse button brings up *PerfectPaint*'s ARexx control window and allows you to select which script you want to run. It also gives you the ability to assign ARexx scripts to some of the drawing tools. You can either set a "default" ARexx script to be applied when using a particular tool, or alternatively you can click on a tool in the toolbox three times (until the ARexx crown appears on the top left of the icon) and then click your right mouse button to reveal a menu that contains all the ARexx scripts available for that tool. Groovy, eh?



The main *PerfectPaint* screen with the palette editor open.

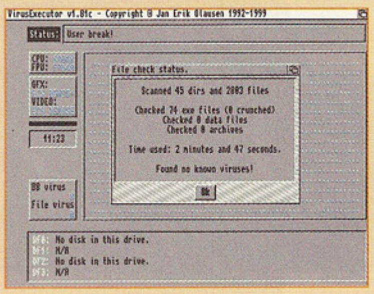
On the animation front, *PerfectPaint* isn't endowed with too much power. It can load Anim5 and Anim7 format animations and features most of the basic tools that we're all used to, but because it's

VIRUS EXECUTOR

The computer virus is a sad fact of life. Programmed by sad, deluded b@$&£*&s, the computer virus, like their biological brothers, serves no real purpose. Their main objective in life is to cause pain and suffering. Although some computer viruses aren't really harmful to your computer, they should always be considered bad news and all possible steps should be taken to eradicate them. There are numerous virus hunter/killer programs available, but with new viruses popping up on an almost daily basis, it never hurts to have more than one virus detecting program on your system.

***VirusExecutor* opens up its own screen, works on a *CyberGraphX*-based system and is really easy to use. It features the automatic analysis of unknown bootblocks, checks both executables and data files, checks memory every five seconds and also has its own bootblock database for saving utility and loader bootblocks.**

For reasons unknown to me, but useful nonetheless, *VirusExecutor* also includes a "Utility" menu which contains entries for sequentially renaming a series of pictures, and another for converting PC generated text files to plain Amiga text. Weighing in at only 170K and compatible with any Amiga running Workbench 2.04 or higher, you really don't have an excuse not to install *VirusExecutor* on your hard drive, or even your boot floppy if you don't have a hard drive. Its installation is pretty easy and only requires that you copy its directory to your chosen location. The only other files required are a few libraries, but these are freely available and most Amiga users will already have them.



Hunt down those nasties with the *VirusExecutor*.

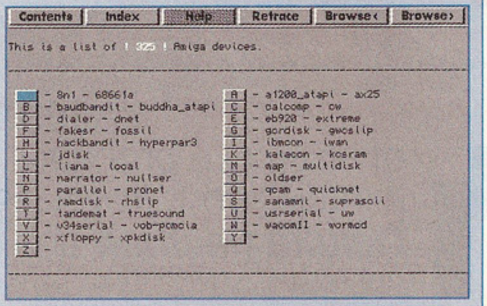
DEVGUIDE, DTYPEGUIDE AND LIBGUIDE

Dedication is the name of the game here. Created and written by Heiko Schroeder, this set of three extremely comprehensive AmigaGuide files contains all the information you will need to spring clean your entire system and update all your device drivers, DataTypes and shared libraries. My hat goes off to this guy because it must have taken him an absolute age to collect all this information and compile these AmigaGuides. Why not take a peek at them and see what outdated device drivers, DataTypes and libraries are installed on your system?

***DevGuide* is the first in the series of three indispensable AmigaGuides featured on this coverdisk and it contains a list of no less than 325 Amiga devices that you can use to check against the devices currently installed on your system. Having a list of all the latest device drivers would be useful enough but it doesn't stop there. Heiko has taken it several steps further and produced this excellent guide that not only contains listings of all the current devices but also contains, in most cases, specific details of the device drivers, what programs use them and where the updates are available from.**

***DTypeGuide* is the second in the series of Heiko's great AmigaGuides and contains a very detailed list of 244 current Amiga DataTypes for AmigaOS3, along with details on their authors and where they're available from.**

***LibGuide* is the last of Heiko's AmigaGuides and contains a guide of 2,376 – yes folks, that's 2,376! – Amiga shared libraries, listing the latest versions and dates, which programs require them, the author's contact details and their availability.**

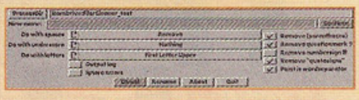


With *DevGuide*, checking your device driver versions couldn't be easier.

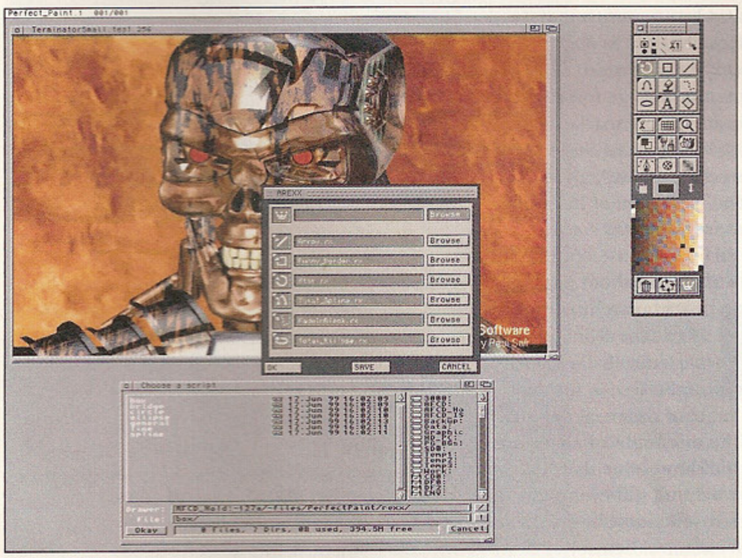
FILECLEANER

This is a neat little program that gives you the ability to rename all files in a selected directory. For example, if you have a directory that contains loads of files, some of which contain a mixture of upper and lower case characters, and perhaps others that contain spaces in their filenames, you can use *FileCleaner* to blitz through the directory to uniformly rename all the files using one of its many options.

***FileCleaner* contains many file renaming options, such as what to do when it encounters a space or an underscore, and it even allows you to specify if you want the filenames to be upper case, lower case or capitalised. It also includes support for very long filenames and the ability to totally rename specified files.**



Renaming files is a doddle with *FileCleaner*.



***PerfectPaint* comes with loads of ARexx scripts, enough to make even the Terminator see red.**

The installation of *PerfectPaint* is simply a matter of copying its directory to your hard drive, copying the supplied Xen font to your system's Fonts: drawer and adding an assign line to your user-startup file. *PerfectPaint* requires an Amiga with a minimum of a 68030 and FPU, Workbench3.0 and obviously as much RAM as possible. Although not strictly necessary, a graphics card is also recommended. *PerfectPaint* makes heavy use of ARexx so it's advisable for you to check whether you have *Rexxmast* running on your system.

Although *PerfectPaint* is really good, I don't personally think it deserves the right to be called perfect. It's missing a few key features, such as some of the more common brush effects like blend and smear, the ability to float the toolbox over the top of a picture and the ability to open two picture windows at the same time.

Perhaps I'm being overly critical here because, at the end of the day, *PerfectPaint* is very powerful, flexible and a really good piece of software. Considering that it has been released as freeware, Georges deserves a really big thumbs up.

really targeted towards graphics card users, it really can't compete with the likes of something like the antiquated *Deluxe Paint 5*.

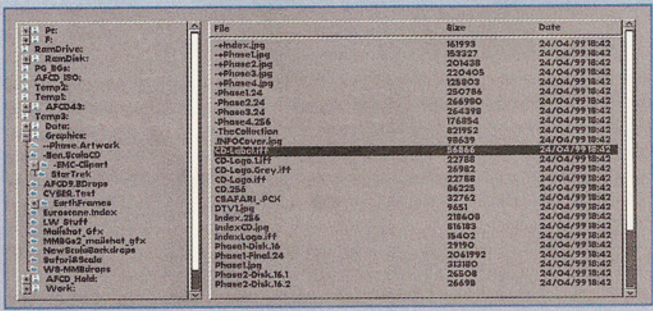
PerfectPaint's menus are pretty standard, with the possible exception of the configurable User menu where you can add your favourite ARexx commands. One problem I found with *PerfectPaint* was straight after loading the first picture. *PerfectPaint* uses the first four colours in its palette for drawing the window that surrounds the image that you load. If the image contains, for example, all blacks in its first four colour slots, your window can become almost invisible.

Had I looked through the menus beforehand, I would have known that there was a menu item in the palette menu called "Make usable palette", which forces *PerfectPaint* to modify the palette without altering the picture so that the window becomes visible (usable) again.

AMIGA FILE VIEWER

This is a quick and simple file organiser and viewer, quite similar to Windows *Explorer* on the PC. The main window has two parts, with the directory structure displayed as a collapsible/expandable tree on the left and the list of files on the right. As a file organiser, you can copy or move files by simply selecting them in the right window, dragging them to the left window and dropping them onto the desired location.

Where *Amiga File Viewer* scores points is in its ability to display and/or execute files. Default applications can be associated with a file pattern, such as #?.iff, in the easy to set up and cunningly named "Default Applications" window. This gives you the ability to set up the file patterns and applications that you want to use with the FileType. For example, if you want to set Amiga File Viewer to use *Multiview* to display all your IFF pictures, you just need to type "#?.iff" in the mask box, "sys:utilities/Multiview" (depending on the way you have set your system up you may also be able to just type "multiview") in the application box and then click "Add". *Amiga File Viewer* will then display your pictures using *Multiview* every time you double-click on picture files that have a .iff suffix.



Quick and simple file organisation and viewing with *Amiga File Viewer*.

Games disk





AMIGA FORMAT

Errol Madoo presents the best arcade games of all time… probably! Defend Earth in ***Amoeba***, exercise your frog's legs in ***Croak2***, eat dots in ***Deluxe Pacman*** and battle aliens in ***Galaxians***.

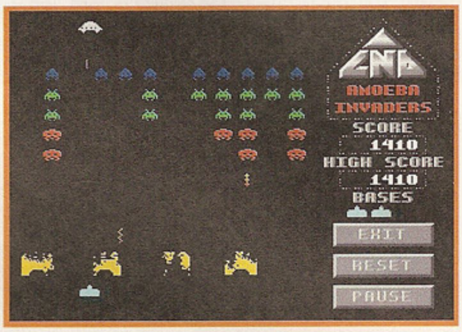
Amoeba

Space Invaders was the original alien vertical shooter. Midway, the company that originally licensed the game from Taito in 1978, soon found themselves in possession of the biggest arcade videogame hit up to that point. In this game, players are charged with protecting the planet from the relentless hoards of aliens marching down the screen, with just a single-shot moving gun and four shot-blocking bunkers as protection. The more aliens you shoot, the faster they move. The original *Space Invader* games were housed in standard floor-standing cabinets with black and white displays, but "psuedo" colour was soon added by using screen overlays.

In America, the game flooded into the regular videogame ghettos such as pool halls and bars, as well as being the first videogame to have ever popped up in department stores, restaurants and other mainstream venues. It was followed by numerous imitators and sequels, such as *Space Invaders II* and *Invaders Revenge*, and became a huge force in the home videogame market as the first arcade game licensed for a home console, the Atari VCS.

The basic idea of the game is to move your tank back and forth along the bottom of the screen and shoot endless waves of aliens marching towards earth. Shoot the flying saucer that periodically flies across the top of the screen for extra points.

Your only real defence against the onslaught of aliens are four buildings (shields) that you can hide behind, but eventually they will be destroyed either by enemy missiles, by the enemies themselves or even by your own missiles. To add a little more urgency to the game, the more aliens you destroy, the faster they descend down the screen.



Am I going to hit the flying saucer in *Amoeba Invaders*?

Amoeba Invaders is arguably the best Amiga conversion of *Space Invaders* in existence, even down to the recreation of the original sound effects. Possibly the only non-standard feature of the game is that it includes a set-up section, although another difference is that the aliens are also displayed in colour, as opposed to the original game's basic black and white display.

The set-up screen allows you to define whether you want to use a joystick, plugged into port 2, or if you want to use your keyboard to control the game.

CROAK2

This is an Amiga conversion of the classic *Frogger* that saw its birth in 1981. *Croak2* attempts to simulate, as accurately as possible, one of the most fascinating stages in the life-cycle of the Australian Cane Toad. As everyone knows (I didn't), the eggs of the Cane Toad are laid within the carcasses of dead sheep. The tadpoles quickly mature in this nutrient-rich environment, and soon there's a multitude of young toads, ready to begin their famous migration to the nearest creek or river bed. This journey frequently takes them across busy roads and rivers, whose erratic currents and high toxicity defy the bulky toad's best attempts at swimming.

If you can't remember, or if you have never played the game before (where have you been?), the basic idea of the game is to get your frog from one side of the road (at the bottom of the screen), over the river and into your home (at the top of the screen). To complete a level you must dodge cars and jump on logs, while avoiding snakes, alligators and otters. Bonuses are awarded for getting the bugs that momentarily appear, escorting lady frogs to their home and getting five frogs safely home.

The game is controlled with the keyboard or, in the case of the two player game, a combination of joystick and keyboard keys, and these can be selected from the main title screen. Magic butterflies appear throughout the game, fluttering down the screen, and although your initial reaction may be to "collect" them, be warned: some can do strange things when caught and other are outright nasty.



The traditional basic graphics and top notch gameplay.

Deluxe Pacman AGA

Namco game designer Moru Iwatani got tired of the glut of shoot-em-ups littering the arcades in 1980 and decided to create an arcade game that looked more like a cartoon than a videogame. His original design called for an animated pizza with a missing wedge for a mouth running around a maze eating everything in sight. The game was christened *Puckman*, from the Japanese phrase pakupaku, meaning to flap one's mouth open and closed.

After the distinctive theme music plays, players find themselves guiding Puckman around a single maze, eating dots and avoiding the four ghosts, Blinky, Pinky, Inky and Clyde (each with varying levels of hunting skills), who escape from a cage in the middle of the screen and are intent on ending Puck's life. In each corner of the square playfield is a large dot that, when eaten, will turn the ghosts blue for a brief period, during which time the tables turn and Puck can eat the ghosts, leaving only the apparently indigestible eyes which make their way back to the cage for reincarnation into another ghost. During every screen, a treat appears for the player under the ghost-cage, in the form of fruit or a bell or some other symbol, waiting to be devoured.

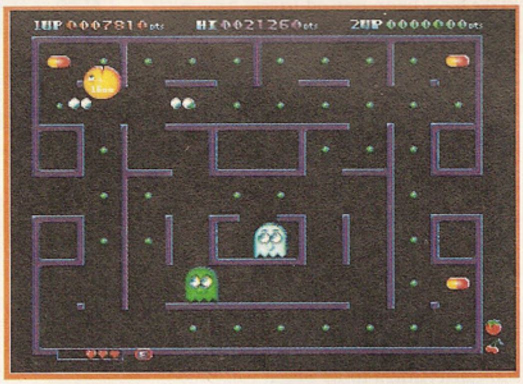
> "Players find themselves guiding Puckman around a single maze, eating dots and avoiding the four ghosts..."

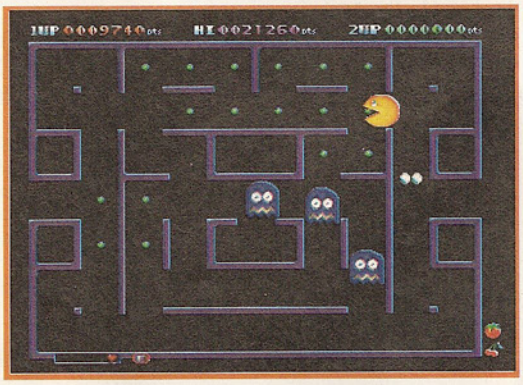
The game is deceptively simple, with only a four-position joystick needed to guide Pac-Man around the maze, but with each successive screen the ghosts get faster and their time of blue-vulnerability shortens. Tension is added with a steady whining sound effect that increases in pitch the longer the game is played.

It was an absolute smash in Japan, following *Space Invader's* lead in causing another nation-wide Yen shortage as tens of thousands of *Puckman* machines started gobbling them up. When the game hit American shores it was renamed *Pac-Man* and it went on to become the most popular arcade game of all time, selling 100,000 units in the US alone, breaking the previous 70,000 sales record set by Atari's *Asteroids*. It was also responsible for spawning a massive merchandising bonanza, with just about everything imaginable imprinted with *Pac-Man's* yellow mug, including the prestigious covers of *Time* and *Mad* magazines.

10 arcade sequels followed the original game, including *Ms. Pac-Man, Pac-Man Plus, Super Pac-Man, Baby Pac-Man, Professor Pac-Man, Pac-Land* and *Pac-Mania*. The Yellow One is now getting the obligatory 3D makeover in Namco's *Pac-Man 3D*, a three-dimensional adventure game complete with a 3D rendering of the original's maze, to be released on the Sony Playstation this year.

The installation of this brilliant conversion is simply a matter of copying the directory to your hard drive and double clicking on the *Pac-Man* icon. For some reason, the game sometimes boots into an NTSC screen. If this happens, all you need to do is hit your TAB key. If you get sick of the original music, the game also offers the option of changing to one of your favourite modules. What more could you ask for?





Pac-Man **– eat the dots, avoid the ghosts... oh, you all know how to play it!**

GALAXIANS

The Nakamura Manufacturing Company, a Japanese company best known for manufacturing merry-go-rounds, changed their name to Namco in 1974 and established their videogame presence with the purchase of the Japanese subsidiary of Atari Corporation. In 1979 they designed and released the first ever colour arcade game, called *Galaxian*. Until this point, colour had only ever been replicated with the use of colour screen overlays, such as those used in *Space Invaders*.

As in *Space Invaders*, players controlled a ship and fired at lines (or formations) of aliens across the top of the screen, but this time the enemy was no sitting duck. They actually left formation and swooped down the screen after the player, dropping bombs all the way. Numerous *Galaxian* sequels naturally followed, including 1983's *Galaga*, an immensely popular title in its own right that spawned its own set of sequels, like *Galpus*, otherwise known as *Galaga 3*. *Galaga's* improvements, aside from more detailed graphics, came in the form of a tractor beam that the aliens used to capture the player's ships. By shooting the offending alien, the player could win back his ship and double his firepower into the bargain.

This Amiga version was written during 1995 and 1996 and is the best conversion that I've come across – as soon as I heard the familiar sound effects, memories of my mis-spent youth came flooding back. Game instructions? Yeah, right! Just shoot at everything that moves.

Your joystick is used to control the game and the only keyboard key to be used is the "Esc" key to quit the game and get you back to either Workbench or DOS. Technical specs include 47 blitter objects, seven hardware sprites, two computed sprites, dual playfield display (4&4) and 10 interrupts. Although these specs may not be too impressive by today's standards, they still make for great retro gameplay.



Based on *Space Invaders*, and equally addictive.

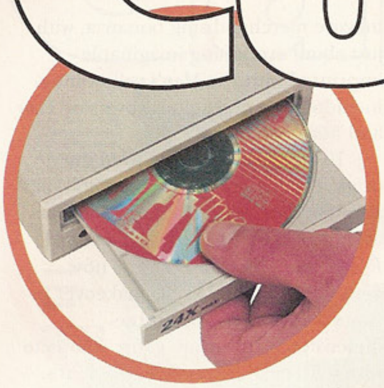
DISK NOT WORKING?

We take every care to test the coverdisk software, but Future Publishing cannot accept any responsibility for any damage occurring during its use. If your disk is faulty, send it back, with 2x26p stamps and an SAE to:

AMIGA FORMAT (insert name of disk) • TIB PLC • UNIT 5 • TRIANGLE BUSINESS PARK • PENTREBACH • MERTHYR TYDFIL • CF48 4YB

If there is a manufacturing error then the stamps will be returned with a replacement disk.

AMIGA FORMAT Coverdisc





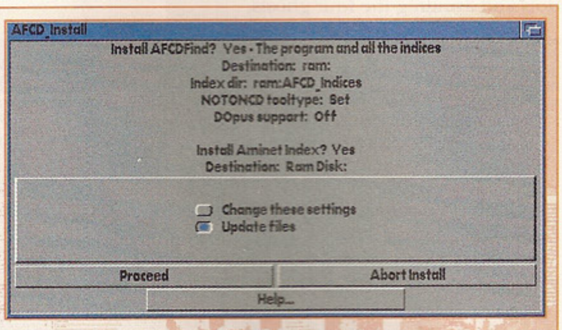
Another CD crammed full of software to test your Amiga to its very limits. Richard Drummond reveals more.

WHAT'S NEW

AFCD_INSTALL

+System+

The new AFCD_Install will not only make sure that your version of AFCDView and Installer is up-to-date, but will also, if you wish, copy across AFCDFind and any indices you need for it, along with the current Aminet Index from the CD. The installer saves your preferences so you can simply double click on it next time you get an AFCD to update your files. Automation at your fingertips – ain't life grand?



If you've set preferences, it'll use 'em again.

APDF 1.0

-Serious-/Graphics/APDF

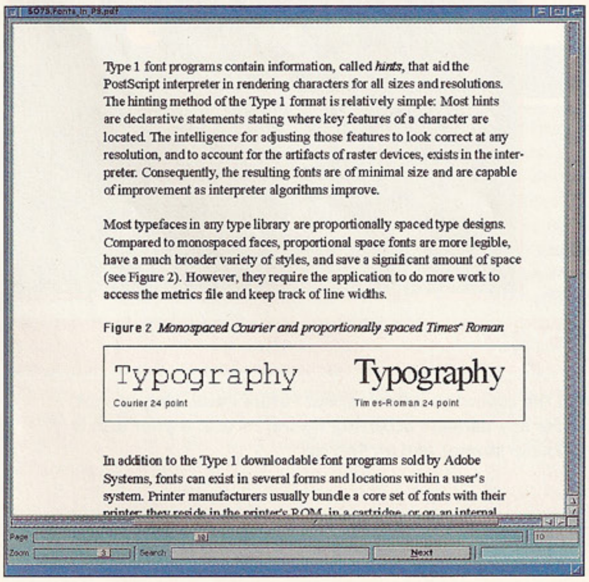
PDF, the Portable Document Format, is a popular method of storing documents, especially on the Internet. PDF is based on *PostScript* so it's device independent: a page should look identical, whether displayed on screen or printed on paper. Unfortunately, PDF's creators, Adobe, aren't known for their Amiga support.

Various third-party tools for viewing PDFs have been ported to the Amiga, including *GhostScript*, the freeware *PostScript* interpreter, and *XPDF*, a PDF viewer for the X-Window environment. Neither of these is particularly Amiga- or user-friendly though.

APDF is a new, Amiga-specific version of *XPDF*. What makes it stand out is that the the graphical interface is realised using *MUI*, so it looks good and is easy to use. The other great thing about it is that instead of having a custom engine for rendering PDF's *PostScript* fonts, it substitutes these for standard Amiga fonts which can be displayed by the Amiga's built-in font engine. This gives a big boost to efficiency and means you can either use quick and jaggy bitmap fonts or slower, higher quality scalable fonts. The Amiga only supports CG scalable fonts by default, but third party software is available to permit the use of PostScript and TrueType fonts (see The Right Type feature on pages 24-27). *APDF* uses a system whereby the *PostScript* font names in a document are mapped to the Amiga font of your choice.

APDF has loads of other features, such as the ability to search documents and copy selected text to the system clipboard. You may export pages in various file formats, including ASCII, *PostScript* or PPM and JPEG images. Pages may even be printed on a *PostScript* printer by exporting as a *PostScript* file to the printer device, PRT:.

At last, a usable Amiga PDF viewer.



Type 1 font programs contain information, called *hints*, that aid the PostScript interpreter in rendering characters for all sizes and resolutions. The hinting method of the Type 1 format is relatively simple: Most hints are declarative statements stating where key features of a character are located. The intelligence for adjusting those features to look correct at any resolution, and to account for the artifacts of raster devices, exists in the interpreter. Consequently, the resulting fonts are of minimal size and are capable of improvement as interpreter algorithms improve.

Most typefaces in any type library are proportionally spaced type designs. Compared to monospaced faces, proportional space fonts are more legible, have a much broader variety of styles, and save a significant amount of space (see Figure 2). However, they require the application to do more work to access the metrics file and keep track of line widths.

Figure 2 *Monospaced Courier and proportionally spaced Times® Roman*

Typography — Courier 24 point
Typography — Times-Roman 24 point

In addition to the Type 1 downloadable font programs sold by Adobe Systems, fonts can exist in several forms and locations within a user's system. Printer manufacturers usually bundle a core set of fonts with their printer; they reside in the printer's ROM, in a cartridge, or on an internal

PHOTOFOLIO 1.0

-Serious-/Graphics/PhotoFolio

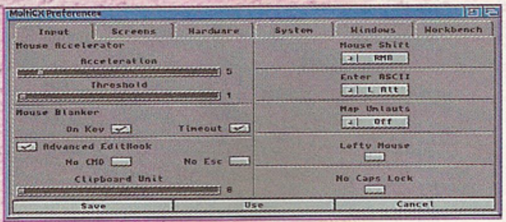
We reviewed this great piece of software in PD Select in issue 125 of *Amiga Format*. For those of you who missed that one, *PhotoFolio* is a *MUI*-based system for

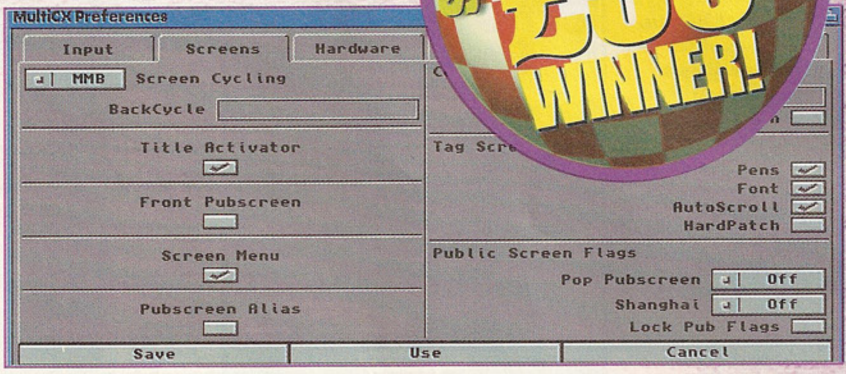


Get that collection of photos in order with *PhotoFolio*.

Your Stuff!

Sponsored by Amiga £50 WINNER!





This issue's prize goes to Daniel Pimley for his extremely easy to use *MCX* prefs editor.

This issue's well-deserving recipient of the Readers' Contribution prize is Daniel Pimley. Daniel has finally finished his GUI-based preferences editor for *MCX*. *MCX* is a great multi-function commodity that can performs loads of little improvements to your Amiga's environment. Unfortunately, *MCX* isn't supplied with a GUI preferences editor – the configuration must be set up by editing *MCX*'s ToolTypes.

Although a third-party editor was produced at one time, it's no longer being developed. Quite frankly, it wasn't very well designed anyway. Daniel's production is cleaner and simpler, with all the functions of *MCX* neatly divided into sections. Good work, Daniel!

simple image cataloguing and easy image processing.

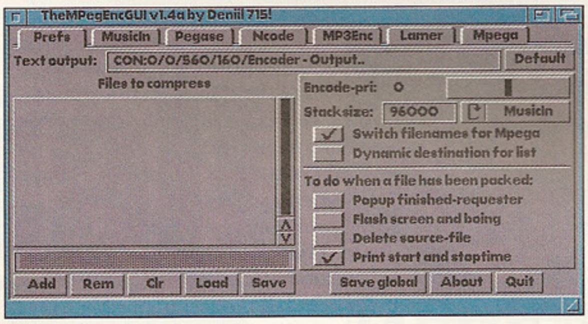
This new version is even better, with several bug fixes and new features, such as internal support for viewing images with Timm Muller's *MysticView*, improved documentation and the ability for the image browser to totally ignore icon files.

EASY ENCODING

-Serious-/Sound/TheMPegEncGui

The MP3 format, or MPEG Layer III, is quickly becoming a standard for the distribution of audio tracks. Many tools exist to perform MP3 encoding on the Amiga, but unfortunately none of these tends to be easy to use. Many can only be run from a shell and require the user to memorise an array of arcane switches and options.

MPegEncGUI can take the drudgery out of compressing audio data. It provides a friendly *GadTools* interface for most of the MPEG audio encoders currently available for the Amiga,



Use *MPegEncGUI* and avoid having to memorise all of those command lines.

Continued overleaf ➡

LITHTECH DEMO

-In_the_Mag-/Reader_Requests/LitchTech







***Shogo* and *Rage of Mages* are two recent and high-profile game signings to the Amiga. Both games make use of MonoLith's *Lithtech* engine, possibly the most technically impressive 3D gaming engine currently available.**

Animation showing of the features of this engine is available on Monolith's website, but unfortunately it is encoded in the proprietary *Indeo* format. No Amiga movie players currently supports *Indeo*, since it requires a licence to be purchased from Intel. No problem. *Amiga Format* have converted it to the more Amiga-friendly *AVI* format. To view it on an Amiga you'll need to use a tool such as *CyberAVI* or *MooVid*. Watch the movie and then drool in anticipation...

Further information on the Lithtech engine is available is from their website, at: http://www.lithtech.com/







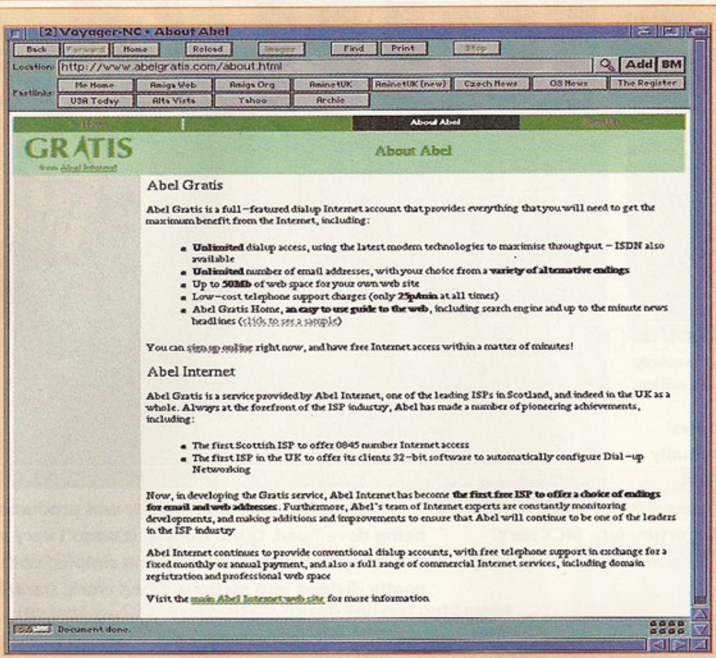
The soon-to-be-ported LithTech engine in action.

FREE INTERNET ACCESS

The number of free Internet Service Providers (ISPs) has proliferated over the last year, and here's yet another one: *AbelGratis*.

***AbelGratis* offers unlimited free dial-up Internet access, an unlimited number of email addresses with a choice of endings, up to 50MB of web space and telephone support (premium rate of 25p/min) at all times. They also supply Amiga Internet software and provide technical advice.**

For more information, see the AbelInternet pages in the Websites section of our CD.



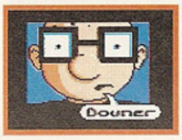
Full details on how to get free Internet access.

⬅ including *MusicIn*, *Pegase*, *Ncode*, *Lamer* and, finally, *MP3Enc*.

GEORGE

-ScreenPlay-/Shareware/George

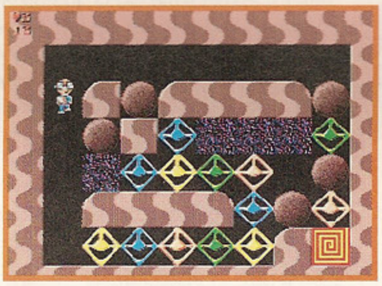
Hands up who remembers the game *Repton 3* on the BBC. Who, in fact, remembers the BBC Micro? Anyway, *Repton* was a great game, sort of like the thinking man's *Boulderdash*. *George*, by Victo Bell, is an Amiga game much-inspired by *Repton*, and it even won our Reader Game prize back in issue 118. The idea of the game is to run around mazes, collecting all the diamonds and avoiding falling rocks.

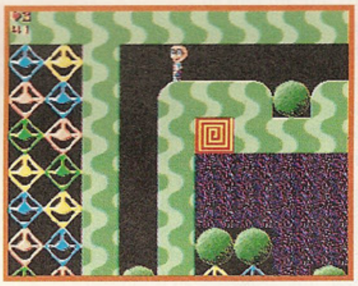


***Boulderdash* with a difference: *George*.**

You start off on the main level but teleporters can transport you to other levels which may be accessed in any order. Some levels have 'Feelers', which roam around, making a nuisance of themselves. If they get trapped in a cage they turn into a diamond.

The cunning and fiendish level design in *George* means that it requires a lot more thought than your average *Boulderdash*-clone, and it's surprisingly addictive. Just plug in a joystick and while away the hours with some really great retro gaming.





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Your *AFCD* should only need replacing if the CD itself cannot be read. If you're experiencing problems with an individual application, phone our technical support line.

This is open between the hours of 2pm and 5pm every Tuesday.

Tel: 01225 442244 Fax: 01225 732341

Email: amformat@futurenet.co.uk

(Please remember to put "Coverdisc" in the subject line.)

Please note that the helpline staff provide assistance with technical problems directly related to the CD and cannot provide training on the software or hardware in general.

We want your work!

You can either send it to us on floppies, Zip disks or CDs (we do take other media formats too). If you are going to send us a multiple floppy backup of your work, please use the version of *ABackup* we supply on the CD in the +System+/Tools/Disk_Tools drawer. We'll return any Zips you send us, so don't worry about getting your disks back.

If you have any further queries about how to send your software in then consult the Submissions Advice on the CD (in Ben_Speaks!, or in the ReaderStuff or +System+/Info drawers).

Your signature: ....

Files you send in this month will probably appear on *AFCD45* – *Amiga Format* issue 129, November.

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Citizen ABC colour printer with cables, software and spare ribbons, £50. 4MB RAM card, £10. Email hiskbli@leeds.ac.uk or ☎ Kevin 0113 224915.

Amiga software: Aminet sets 1-6, Epic Encyclopedia '97 – The Learning Curve, Shadow of the Third Moon, many games on floppy, all with manuals, many boxed. ☎ Glenn 01707 896535 or email glenn.robinson2@virgin.net for list.

Amiga A2000 (believed to be 68020) with flicker fixer, video card, 3MB RAM, 40MB hard drive, PCAT 286 card, 5.25" drive, maybe tracker ball, graphics/CAD/CD software; some software needs dongles (can provide). No monitor. (Ex architect's). ☎ 01525 371886.

A1200, '040/25 34MB RAM. In Eyetech tower, IDE flyer, £250, may spilt for right price. Also spare A1200 motherboard, no ROMs, £60 ovno. ☎ Folkestone 01303 246478 or email gareth@melody2.freeserve.co.uk.

Squirrel SCSI plus 2x CD-ROM, Apollo 1230/33, FPU, MMU. Two internal DD floppies, one with minor damage, Phillips CMM8832 monitor, PC keyboard interface, genuine A1200 LED interface. Large selection of games. Email offers to punter@gespatcho.u-net.com.

A1200T (Power Tower), Apollo 1260/50, 16MB fast RAM hard drive (500MB), 32x CD-ROM drive, 14" monitor (VGA), scandoubler, Power Flyer, Amiga keyboard, adaptor and speakers. £570 or best offer. Canon BJC-4200 (no printer cable) £70, A1200 DataFlyer SCSI+ £20, B&W hand scanner with OCR software £15. Email d_pieman@hotmail.com or ☎ 0161 6247058 (after 6pm) and ask for Adam.

GVP 4008 SCSI card with 4MB, GVP fast RAM, fits Zorro Amigas. Good condition, £45.00. Power Flyer fast IDE controller for A1200, brand new, £35.00. Email c_klausen@hotmail.com.

A1200, hard drive, HP 310 colour printer and software, including Wordworth, Money, TurboCalc, Organiser and games, £130. Pace 56K external modem with NetConnect (CD version) and STFax Professional, £75 All boxed. ☎ 01642 285953 or email stephen@ssharrison.freeserve.co.uk.

Apollo A1220 Turbo 68020 25MHz accelerator, with 4MB RAM + 68882 FPU, fitted for sale. Boosts standard A1200 to three times as fast (5Mips). Compatible with all A1200 software. £40 o.n.o. ☎ Marc 01502 512670 after 6pm or email marc.catchpole.prestel.co.uk.

100 issues of Amiga Format, issues 22-122 with all coverdisks. AFCDs 12-38 and subs disks 50-122, with newsletters. Best offer secures. ☎ Glenn 01707 896535 or email glenn.robinson2@virgin.net.

A4000/40 with modem, NetConnect software,1084 monitor, Canon printer, CD-ROM, 250MB SCSI plus mags and games. £400 for the lot. ☎ Gaz 01946 67775 or email gaz@terak-nor.demon.co.uk.

Panasonic KX-P2123 colour dot matrix printer, features quiet printing, still has original box and instructions, like brand new, £50 plus P+P. ☎ Anthony 01925 480751 (Warrington) or email shezzor@asp.u-net.com.

Ricoh CD-RW MP-6200S SCSI unit. £200 ono. Offers to Matt: ☎ 01992 410215.

Blizzard IV, 68030, 50MHz, 4MB SIMM, boxed, £50. Sale due to PPC upgrade. ☎ Iain 01223 294235 (Cambridge), email irth@symbionics.co.uk.

Skidmarks £6, Monkey Island £7, Theme Park CD £7.50, Speccy Classix '98 CD £6, Jurassic Park £7. Also various AF/CU CDs and coverdisks for sale. Andrew Jackson, 7 Nut Tree Close, East Huntspill, Nr. Highbridge, Somerset, TA9 3PN, or email jandrew@ukonline.co.uk.

A500+ memory expansion, disk drive, software, games, etc. Free to anyone who can collect (Bradford area). ☎ Mel 01274 570475.

WANTED

Cheap '060 accelerator for towered A1200, must be in good condition. Memory not essential. Email Duncan at: dkm@free4all.co.uk or ☎ 01333 312715 after 7pm.

Help! I've lost my Blizzard 1230 SCSI install disk. Does anyone have a spare copy? I need the 1230scsi.device file. ☎ Paul 01268 584066.

Help needed. I require disk 7 for Dragons Lair 3 and disk 1 for Street Fighter 2 Turbo by Gametek because mine are corrupt. If you can help, please ☎ 0151 6446939.

Help! Do you have Colonization, Pirates, Darkmere? Will pay reasonable prices. Originals only please, and in good condition. Must have manuals. ☎ 01705 646914.

K240 game and subs disk 78 from AF. Will pay £3 or £4 for both. Write to: Chris, 35 Castle Lodge Crescent, Caldicot, Monmouthshire, NP26 4JL.

A600 accelerator, Viper 630 or Apollo 620. Would the person who rang me about the above ad in May '99 issue 123 please call again, thanks. ☎ 01633 278821.

Please help! I need a PCMCIA card of any size. ☎ Anthony 01474 706114.

Working Rombo VIDI Amiga 12/24 frame grabber with software. May also consider working ProGrab model. Good price paid for best fully working device. ☎ Steve 0161 7373356.

Jet Strike, disk version. Will buy or swap. Write to: Ste Rye, 13 Westfield Avenue, Highfurlong, Carleton, Blackpool, FY3 7LU.

Pirates! Any version. Email hisbkli@leeds.ac.uk or ☎ Kevin 0113 224915.

Bloodnet AGA or CD32, Prey CD32, Beneath a steel sky CD32. I'll pay up to £12/30DM per game. Email ancor@datacomm.ch.

Anybody with an A4000 desktop upgrading to PPC? I need a CPU board, '040 or '060, for my Amiga. I can pay from £50 to £75. Email paularnold@free4all.co.uk or ☎ 01903 739069 after 6pm and ask for Paul.

Eyetech 630/33 accelerator board for A600 non-POP or POP to 32MB. ☎ Stan 01328 851538.

I'm looking for Final Writer, higher version than Final Writer Lite. As high as possible, reasonable price please as I am disabled and unable to work. I have an A1200. ☎ 0161 8655537.

Ultimate AMOS book (plus disk) desperately wanted. Must be in good condition. Willing to pay a good price. ☎ Jason 0181 8486400.

PD's Soft CDs: Hottest 1, 2, 3, 6, Utilities and Megademos. WS's Multimedia Toolkit 2, AMUC Collection, EMC 3, 4, WOTW 92 CD, BCI Net 1, 2, CDPD 1, 2, 3, 4, Fresh Fish Collection. Others considered too. Originals only, please. Philippe Dumont, rue Lombry 7, 4920 Aywaille, Belgium. Email hibisch@hotmail.com.

Desperately seeking Image Master RT and Montage 24 graphics software. Cash waiting. ☎ John 01603 743827, email john@woodgatey.freeserve.co.uk.

TabbyControl driver disk for Tabby graphics tablet. I have everything except the original software. ☎ 01744 607313, ask for Mike.

PERSONAL

Also see the AmigaAngels document on our CD.

For the latest DOpus FileTypes, Buttons, Scripts, etc, visit the Dopus OneStop website at http://www.rmbc.freeserve.co.uk.

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World Of Amiga special is available now. It contains interviews with loads of Amiga celebrities, reviews of Napalm, IOblix, OXYPatcher and much, much more. Download it from www.trogsoft.freeserve.co.uk/woa/.

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Total Eclipse BBS, ☎ +44 (0) 1983 522428, 24 hours. 33.6K, home of Liquid Software Design and MAX's Pro support. Friendly sysop, 8.6GB of storage, CD-ROM.

Quest BBS, Wakefield. West Yorkshire's largest BBS with over 30,000 files online, including the latest 7 Aminet CD-ROMs. Online weekdays, 6pm-6am and weekends, 2pm-6am. ☎ 01924 250388.

BOBBS, ☎ 01243 371644, online 24 hours. Based in Hampshire, South East, host for Powernet. Loads of files, home of BullRPG, The best Amiga Lord clone. Speeds up to 56K. Call now!

Skull Monkey BBS, Lincoln. Online 24 hours. ☎ 01522 887933. Friendly sysop. Email sns@skullmonkey.freeserve.co.uk – keeping the Amiga alive.

Elevate BBS, Hants, online 24 hours. ☎ 01329 319028.

Bedlam BBS, Leicester, online 24 hours. ☎ 01162 787773.

Entertainment BBS, Wigan, online 24 hours. ☎ 01942 221375.

Frost Free BBS, ☎ 01484 327196 (Slaithewaite, W. Yorks).

The Forum! BBS online 24 hours, Kilmarnock, Scotland. Over 35 members, 2,000+ files available, including games, pics, utils, etc. Sysop: Jamie Maguire. Run by a software development student. ☎ 01563 540863. 36K.

Bill's BBS, Cumbria, online 24 hours (mail only between 2.30am and 3.30am), ☎ 01229 434393 or 0870 7878615. Sysop: Bill Clark. Visit http://cumbria.cjb.net, email billsbbs@cornerpub.com or bill.clark@ukonline.co.uk. Supports Fidonet. Loads of free files, games, doors, quizzes, etc. Unlimited downloads.

Zodiac BBS, Hants. Online 11am-7pm 7 days a week. ☎ 01243 373596. Sysop: Destiny Co. Sysop: Axl. Running Maxs Pro v2.11, Hellnet. Lots of files.

Alpha Zone BBS, over 10,000 files, online CD-ROMs, 56,000bps and free email. ☎ 01788 551719 after 10pm.

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Moonlight BBS, Bedford, online 6pm-8am, 24 hours at weekends, ☎ 01234 212752. Sysop: John Marchant. Email gnome@enterprise.net. Official Transamiga Support BBS, unlimited downloads, very friendly sysop with excellent Amiga knowledge. Aminet online. Run by an experienced Amiga programmer who will help you out for free.

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User group ads will be printed for three issues.

N.P.A.U.G. is a new Amiga user group based on the net. We offer a free monthly magazine and tech support over the web. If you're interested in joining, visit our website: http://members.aol.com/npaug/home.html or email me: npaug@aol.com.

Are you Welsh, live in Wales or love Wales? Then join Cymru Amiga User Group. Visit us on http://bounce.to/caug or email dark.lords@deathsdoor.com to join.

Amiga Support Association. We offer help and advice to Classic Amiga enthusiasts. Monthly meets to be arranged for a Southampton Venue. Please contact Phil for more information: Snood@UKOnline.co.uk or ☎ 01703 489701.

United Amiga User Group, est. 1986. Technical support, magazine, free coverdisc, Internet book search, PD library, digitising and scanning. Send SAE to Martyn Sherwood, 13 Rodney Close, Rugby, CV22 7HJ.

Amiga Support Association. New Amiga Group starting up intending to help people with their systems in the Southampton/Fareham area. Monthly meets to be arranged. Please contact Phil for more information: ☎ 01703 489701 or email Snood@UKOnline.co.uk

Will you, can you, do you want to or do you need help with your Amiga? If so, please ☎ Terry 01709 814296 (Rotherham).

West Lancs User Group. Sundays, 1pm-4pm at St. Thomas School Hall, Highgate Rd, Upholland. ☎ 01695 623865, email ralph@twiss.u-net.com. Help and advice, novices and experts welcome. Printing and scanning done for free. We also have a PC section.

Is there anybody in the Northamptonshire area interested in starting up a new user group? Please contact me: ☎ 01536 724309 or email nsthomas@ukonline.co.uk.

Workbench, the Manchester Amiga user group. We meet on the first Thursday of each month at 7:00pm and offer general Amiga chat. ☎ 0161 839 8970. Also, check out our website at: www.workbench.freeserve.co.uk. Alternatively, email: mail@workbench.freeserve.co.uk.

Live in the west/Wales? No Amiga owning mates? Then be one of the first to join the Wales and South West Amiga Group by mailing mazz@sucs.swan.ac.uk or calling 07801 453571!

The Amiga free helpline needs helpers, especially with regard to video, music, radio, graphics cards, PPC and digital cameras. Also, anything else that you can think of. ☎ Terry 01709 814296.

Want the latest reviews, news, interviews, articles? then visit the NEW AIO website at http://www.aio.co.uk, or visit #amos on ircnet, Saturday 9pm-midnight.

Amiga users – do you need help? Amiga users – can you help? If so, contact Terry for more details. ☎ 01709 814296.

Medway and Maidstone Amiga collective. Meets monthly. Advice at all levels. Experts and beginners wanted. ☎ Dave 0961 809466. Support your local user groups!

Join a new email club for Klondike, a Reko Productions game. Cardset creators and cardset collectors, Amiga and PC. Email kevin@reko.karoo.co.uk (make friends).

Bournemouth: Dorset/Hampshire. Anyone interested? User group contacts. Amigan, one year, seeks new/old users for chat/helping each other. Email to start, can/will post later if not online. gctshe_m@mail, bournemouthandpoole-cfe.ac.uk.

New Amiga sound and demo association seeks input, contacts and support to form a user group based around the Amiga music and demo scene. Interested? ☎ Daev 01243 864596 or 0961 985925.

Interested in Internet Relay Chat? Why not visit #Amigazone on Dalnet? We are a friendly bunch and meet at 10pm every day. Visit our website at: http://www.tsd-ltd.demon.co.uk.

Amiga free helpline needs helpers. Also, it needs to help other Amiga users. If you fit into either category, ☎ Terry on 01709 814296 for more information.

SEAL, South Essex Amiga Link. Meets twice monthly at Northlands Park Community Centre, Basildon, Essex. Offers help, advice, tutorials and presentations on popular software and hardware.

Continued overleaf ➡

Also offers scanning, printing, email and a 36 page A4 magazine. Contact Mick Sutton, 20 Roding Way, Wickford, Essex.
☎ 01268 761429 (6-9pm). Email seal@thunder.u-net.com or visit http://seal.amiga.tm.

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Click!, Boomsesteen Weg 468, B-2610, Wilrijk.
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Amiga City, Avenue du Prince, Heritier, 176, 1200 Brussels.
☎ 2736 6111, fax 2732 6834. Visit http://users.skynet.be/AmigaCity or email amiga.city@skynet.be

Generation Amiga, Rue de l' Eglise Saint Gilles, 22, 1060, Brussels.
☎ 2538 9360, fax 2538 9135. Visit http://get.to/genamiga, email genamiga@online.be

Digital Precision, Chaussee de Jette, 330, 1081 Brussels.
☎ 2426 0504, fax 2420 3875..

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National Amiga, 111 Waterloo Street, London, Ontario, N6B 2M4.
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☎ 0116 2516789.

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Gamestation, Unit 29, The Market Vaults, St. Helens Square, Scarborough, North Yorkshire.
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Dr. Flay's Amiga Clinic @ The Global Lounge, Unit 13, Lemon Street Market, Lemon Street, Truro, Cornwall, TR1 2NS.
☎/Fax: 01872 274037, email dr_flay@hotmail.com or mike@globallounge.co.uk or visit http://www.globallounge.co.uk
Only stocks PD at the moment, but can order anything with good prices on phase 5 hardware. They are an Internet shop and make websites, do design work, advertising and promo material and can also build custom Amiga/Siamese setups.

Planet Games, 3 Royal Oak Buildings, Waterloo Road, Blackpool.
☎ 01253 348738.

Allsorts, 51 Park Road, Wosbrough Bridge, Barnsley.
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Used games, PD, disk drives, monitors.

HardPlay Software, 2 Broad Street, Newquay, Cornwall, TR7 2BU.
☎/fax 01637 850909.

Vortex Services, 13-15 St. Michael's Square, Ashton Under Lyne, Lancs, OL6 6LF.

Swops, Corner of Bold Street, Fleetwood.
☎ 01253 776977.

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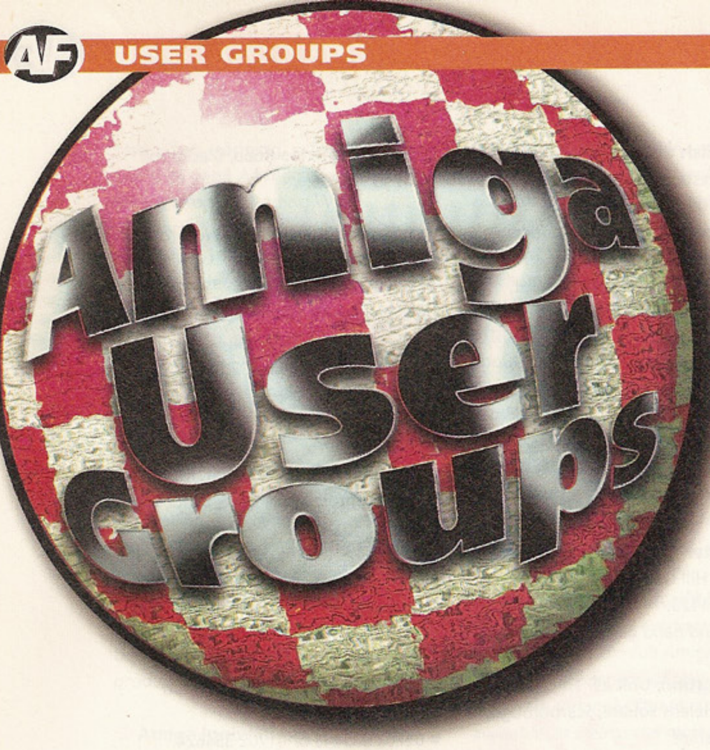
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Power Amiga

Andrew Elia and Julian Sadotti from AmigaSoc visit the Power Amiga User Group in Portsmouth.

On a sunny Saturday in May, we braved the two hour journey with Connex South Central to Portsmouth to meet what must be one of the fastest growing Amiga user groups in the country. Once we arrived at our destination, we were greeted by Power Amiga (PAUG)'s founder and chairman, Richard Blair.

First we were shown around the proposed venue for the Power Amiga show, presently pencilled in for September. The Portsmouth Guildhall has been home to many celebrities, such as Steps and Louise (although much to our disappointment, she was nowhere to be seen on the day). It's a magnificent venue, and in comparison to the prices charged by traditional London venues, it's phenomenally cheap.





Experts and novices alike come together at the PAUG meeting.

We then went on to the Southsea Community Centre where the meeting was already in progress. The first thing that struck us was that PAUG actually had a meeting where Amigas were present. With the exception of well-known groups like Kickstart and SEAL, there's a definite trend towards having meetings in a pub. While this is all very well in social terms, it could be argued that the merits of being face down in a puddle of vomit aren't quite on par with learning something new about your Amiga. Mind you, if you've seen how Ben gets in Cologne, you might say otherwise!



One of the group's Directory Opus fans explains why it's such an essential purchase.

After having a brief look around to see what everyone was doing with their machines, we bundled Richard into a quiet room so we could extract as much information about the group as possible.

It all began in August 1998. Richard suggested the idea of a user group to a number of his Amiga-owning friends, who were very enthusiastic about the idea. After preparing posters and advertising the group as much as they possibly could, their efforts were rewarded with an impressive initial attendance of 16 people. From that point, things have grown considerably. Richard freely admits that PAUG wouldn't be the success it is today if it wasn't for the advice and encouragement he received from Ben and Nick at *Amiga Format*. Ahhh...

EXTRA SUPPORT

The group have since managed to secure the support of a number of local companies, who have donated prizes for their raffles and placed advertisements for the group. They've also had articles written about them in their local newspaper, *The Evening News* (which helped boost their numbers even further) and have even managed to twist the arm of their local MP for some support. They certainly seem to be an enterprising user group, which is no doubt a result of the dedication and energy of their committee. This consists of four people, in addition to Richard. They demonstrate a unique approach to democracy in that everything the group does is decided upon by vote, as long as Richard gets the final say.

Like many other user groups around the country, Power Amiga have jumped on the newsletter bandwagon with their own offering. It's filled with all the latest news about the goings on at PAUG, as well as a few features and reviews from members. As well as a newsletter, their members also get a disc magazine. Although we didn't get to see what it looked like, we were told that part of the reason for producing it was as a taster of the joys of the net for non-connected members as it includes cut-down versions of the group's website.



MEMBERS

When asked about how well the Amiga novices mix with the experts, the answer was quite pleasing. PAUG encourage people of all levels of expertise to attend meetings. Those who aren't so familiar with what their machine can do are asked what they want to do with their computer, and it is explained by those in the know.

To add to this, people who've been used to using their Amigas for specific things have been introduced to the wealth of other things their machines can do. It's definitely knowledge sharing like this that makes user groups like PAUG such a valuable asset to the Amiga community. Interestingly enough, this concept has been so effective that PAUG members have even been known to bring non-Amiga people along to the meetings to show them just what they can do.

PAUG enjoy an average of about 20 people per meeting, although some 50 people had signed the entrance register at the meeting we attended. What we saw definitely seemed to reinforce Richard's words about PAUG being open to all. When asked about the age range of attendees, we were told that they have members aged between 16 and 65. These people aren't just from Portsmouth either, with PAUG attracting members from as far afield as the Isle of Wight, Bognor Regis, Brighton, Chichester and Fairham.

There's no doubt that PAUG is a great success, and we hope that it'll continue to grow and succeed.

CONTACTS

While we were at the PAUG meeting, we also got the chance to meet up with Phil Stevens from the newly-formed group, ASA (Amiga Support Association). The Southampton-based group are a combination of a user group and advice centre and are developing this effort in partnership with PAUG. We'll no doubt concentrate on them in more detail in future issues. Meanwhile, contact Phil by calling 01703 489701 or emailing snood@ukonline.co.uk for further information.

If you'd like to see what the PAUG newsletter looks like, drop an SAE to Richard Blair at 6 Villiers Road, Southsea, Hants, PO5 2HQ, and he'll happily pop one in the post to you, free of charge. What a nice chap! If you're interested in joining PAUG, write to the above address or email richard@poweramiga.freeserve.co.uk

afb

Amiga Format's mailing list is getting more active all the time. Over 700 people are now on it. **Why aren't you?**

This issue's foray into the world of the Internet mailing list for *Amiga Format* brings the shocking news that people really aren't all that keen on the cinema They prefer to keep their complexions sallow by staying indoors looking at a small screen, instead of going out and staying indoors looking at a large screen, with some people not having been to the flicks since *The Jazz Singer*, starring Al Jolson!

In addition to such frivolity, there has been discussion of what TLAs, abbreviations and acronyms stand for in the computing world, how to improve your connection speed online and lots of talk about fibre channel devices and the moon landings.

Because of someone complaining in these very pages (see Mailbag), I now put it to you that to get the most from the delights of afb, you'll need to accept the cookies that eGroups sends out, but other than that the service seems to be running fairly well.

Remember that you don't actually have to use the afb website at all, limiting your exposure to the little digital biscuits, but if you don't then you can't make use of the many additional features like the calendar, opinion polls, reviews databases and much more that's available on the website.

The amount of messages daily has settled to no more than 150, with many offering information not available anywhere else in the Amiga market, so to get the latest technical info and support from the many bright people on the list, sign up to the afb now.

GETTING ON AFB:

You can subscribe to the afb by going to the following website and signing up:
http://www.egroups.com/group/afb/

If you just want news on when the next issue of *Amiga Format* will be out, we offer that at:
http://www.egroups.com/group/afb-announce/

It's worth joining both lists since they each offer unique things and the announce list usually only has one email every four weeks.



afb

The fax-back service is growing this issue, but we still want to know what you want to see here. Whether it's tutorials, reviews or features from recent issues or older ones, we're ready to include what you want to see, so just get in touch and give us the details of what you want (feature name, issue number, page numbers) and we'll put it on the list.

If you don't know these details, ask us anyway and we'll see what we can do. Remember that you'll need to have a combined phone/fax or *STFax* and a fax modem in order to take advantage of this service.

HOW TO GET IT:

1. Dial 0906 302 1437 and wait for a fax check.
2. Key in the three-digit code listed in the table on the right for your chosen article.
3. Press Start/Send to receive your fax-back.

If you run into any difficulties, contact our fax-back helpline on 0870 120 1240 (helpline open Monday to Friday, 10am-5pm; calls from the UK are charged at local rate).

Fax-back calls cost 50p per minute at all times. The service takes between two and eight minutes per page, depending on the quality of the phone line, your fax machine's specifications and the number of photographs on a page. Introductory pages with illustrations only won't be included, only pages with text. UK premium rate numbers may not be accessible from overseas.

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AF 127 – SEPT 1999

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Colour Originators: Phoenix Repro
Printed in the UK by GSM and Southern Print.

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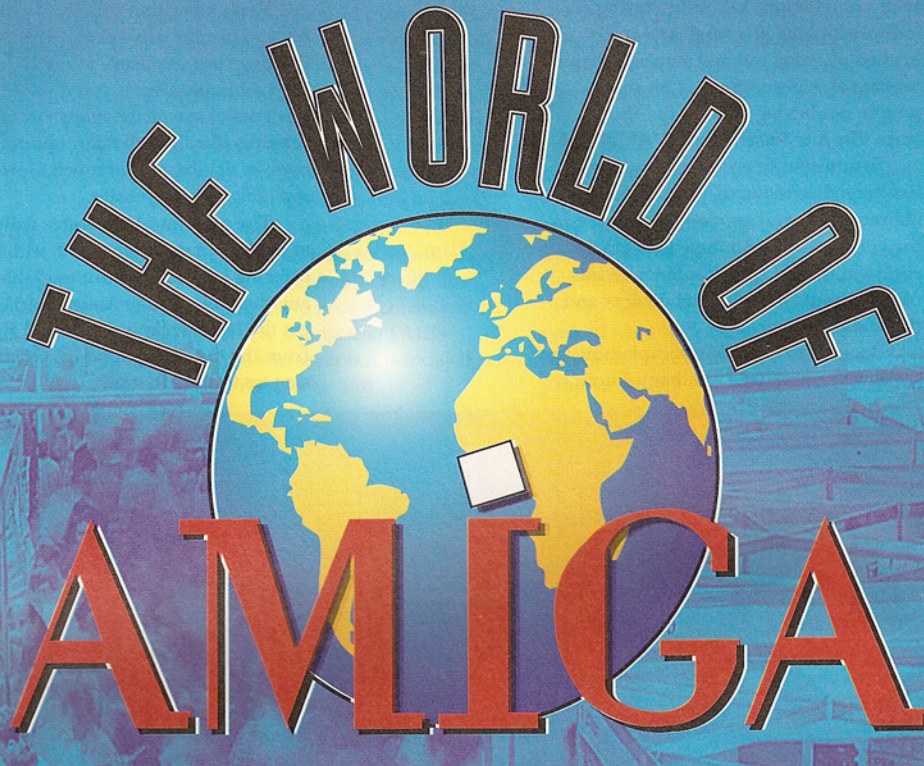
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If you have a feature idea, a long term test, a reader request or you want to be in the Amiga Angels list, send an email to ben.vost@futurenet.co.uk with "Features", "Reader Review", "Reader Request" or "Amiga Angels" in the subject line accordingly. If you don't have email, a letter to the *AF* address with the same subject headings is also fine.

If you want to speak to us about a technical problem, we have a reader call day on Tuesdays. Call us on (01225) 442244 (10am–1pm, 2pm–5pm only). We're sorry, but we can't give games tips over the phone.

Next Issue

All the latest news from the World of Amiga show, including pictures of the new machine models and fresh details of products launched there...



PLUS:

Possible reviews of:
Tornado3D, **Power Flyer A4000**, *Wasted Dreams*, **T-zerØ**, *Hypercom cards*, **Power Mouse adaptor**, *another Head-2-Head* **and much, much more...**

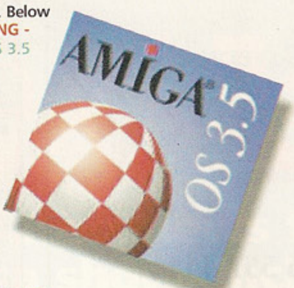
October issue on sale August 26th

The contents of future issues may be subject to change – no guarantee is implied or intended.

new product

new amiga OS3.5 upgrade

Power Computing is the Official Distributor of the new OS3.5. We are able to offer a special discount for 3.1 ROM chips when purchased with OS3.5. Below are some of the features of Amiga OS3.5. Available in August. WARNING - You must have OS 3.1 ROMs and software to be able to upgrade to OS 3.5



available august £34.95

easy internet access

CP/IP Stack, www Browser with offline/online support, ew cross-application email library, new email client.

support for hard disks - 4GB

ISDPatch (new standard for 64-bit devices. Updated nfo, format, diskcopy and fastfile system). New Hard rive Toolbox.

new graphical user interface

lew icon set (glow icons), new icon library, new esource library, new GUI editor for developers, updated nd enhanced workbench.

extensive cd-rom support

CacheCDFS, new playcd, new CDFS prefs.

powerpc support

New Warpup PowerPC support, new preferences.

html documentation

New comprehensive instructions.

full printer support

New printer device, new printer preferences.

OS3.5 PRE-ORDER FORM Please send me an OS3.5 upgrade @ £34.95

Please tick model of computer owned - A500 A600 A2000 A1200 A3000 A4000

NAME.................................... ADDRESS..

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.... POSTCODE .... TEL No. ....

CARDHOLDERS NAME .... CARD TYPE (EG. VISA) ....

CREDIT CARD No. ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐ ISSUE No..........

SIGNATURE .... EXPIRY....................................

SPECIAL OFFER 3.1 ROM chips at a special price only when purchased with the new Amiga OS3.5.

A500/600/2000 ROM chips @ £14.95 ☐ A1200/3000/4000 ROM chips @ £19.95 ☐

TOTAL £........... Please add £5 delivery. Make cheques payable to Power Computing Ltd

new product £34.95

new powermovie software

Power Computing is proud to annouce the final release of its long awaited PowerMovie. After its successful review in the May issue of Amiga Format, PowerMovie, the animation editing tool, playmovie and the animation player tool, have undergone a few more changes and extra testing. Below is a list of the key features:





- Full compatibility with all AGA Amigas
- Edit 320 x 200, 256 colours or HAM-8 frames based animations
- Real time playback, including synchronised soundtrack and sound effects
- Frames can be any size and have different palettes (they will be resized and remapped according to the chosen format)
- Frames can all be played at the same (full) speed, or groups of frames/single frames can be played with a specified delay
- 17 frames per second should be possible on an Amiga with a 50MHz 68030 and 8MB of RAM. 25fps (and more) on a 68040/68060 equipped machine.
- Independent player to record on a VCR, show or view the animation
- A stereo soundtrack can be encoded with the animation
- Separate sound effects can be sychronised to specific frames
- Minimum requirement for decent playback speed is a 6x CD-ROM, 8MB of RAM and 68020 equipped machine

PowerMovie CD-ROM **£34.95 plus p&p** Business Licence £TBA



turbo print 7

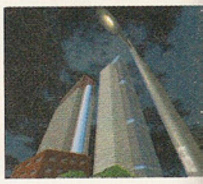
Turbo Print 7	£38.95
Upgrade from 5 & 6 to TurboPrint 7	£18.95

epson printers & consumables

Epson 440 - colour inkjet	£99.95
Epson 640 - colour inkjet	£119.95
Epson 740 - colour inkjet	£189.95
Epson Stylus Photo 700	£179.95
Epson Black ink cartridge	£15.00
Epson Black ink cartridge for Photo 700	£10.00
Epson Colour ink cartridge 440/640/740	£17.00
Epson Colour ink cartridge for 700	£15.00
Epson ink cartridges for other Epsons	£CALL
Epson A4 Photo Quality inkjet paper (100)	£10.00
Epson A4 Photo Quality Glossy film (20)	£10.00

NEW RED MARS CD-ROM GAME





new red mars game

- Thousands of combinations to make hundreds of units
- Tactical battles
- Exploring, mining and building
- Up to three players can take part
- Missions and freeform games
- Playable on any Amiga with CD-ROM
- Graphics card support

Red Mars CD-ROM	£19.9
Breathless 3D game (new low price)	£9.95
Big Red Adventure CD	£9.95
Directory Opus Magellan II	£49.9

scan doubler and flicker fixer

The NEW internal ScanMagic from Power plugs onto the LISA chip and the ALICE chip with a 15-pin connection to a monitor. This leaves the 23-pin monitor port free for use with a genlock device £49.9

ScanMagic Internal with Flicker Fixer	£79.9
ScanMagic External	£49.9
ScanMagic External with Flicker Fixer	£79.9

monitors - 3yr on-site warranty

15"SVGA monitor for graphic cards or ScanMagic	£125.9
17"SVGA monitor (.26 pitch) for graphic cards or ScanMagic	£245.9
17" monitor (.28 pitch)	£199.9

scanquix 4

Award winning scanning software	£49.9

digital cameras

VDC-100, 250,000 pixel CCD	£99.9
VDC-200, 470,000 pixel CCD built-in flash, memory slot	£199.9
4MB Flash RAM for VDC-200	£49.9
40 Alkaline batteries	£24.9

flatbed scanners

Epson GT7000 scanner (requires SCSI interface)	£199.9
Mustek SP6000 Scanner	£79.9
Image FX scanner driver software	£149.9

new low power modem bundles

Economy bundle 1* 56.6 Kbps Fax/voice including iBrowser web browser, Net & Web	£69.9
Economy bundle 2* as above plus Power Port Junior fast serial interface	£89.9

*All modems are internet ready and include 30 days FREE subscription with Demon Internet.

NEW 56.6 Kbps Fax/Voice modem only	£59.9

gvp products

A1200 SCSI Interface for GVP A1230acc.	£49.9
HC4008 SCSI controller and RAM expansion (up to 8MB) for the A2000/A4000	£99.9
GURU ROM	£49.9

amiga 3.1 operating system

*Disk set & 4 manuals - Workbench, DOS, AREXX &

Amiga 3.1 OS for A1200/3000/4000 ROM chips, disks and manuals*	£39.
Amiga 3.1 OS for A500/600/2000 ROM chips, disks and manuals*	£35.
Amiga 3.1 OS disk set and manuals* (no ROMs)	£19.
Amiga 3.1 OS A1200/3000/4000 chips only	£25.
Amiga 3.1 OS A500/600/2000 chips only	£19.
Amiga 3.1 OS disk set only	£9.

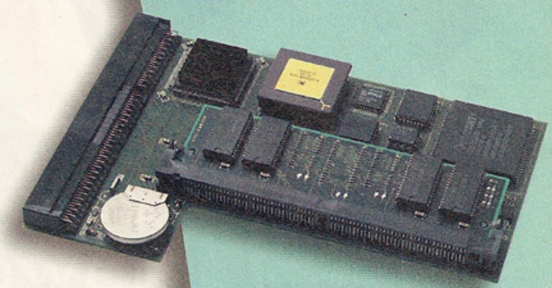
All ROMs come with full fitting instructions

new products

phase 5 amiga accelerator cards

Power Computing is now the sole distributor for the UK of the Phase 5 product range. The range of products include the popular Blizzard series of accelerator cards for the A1200, A2000 & A4000. Check out our web site for all the latest product news - www.powerc.com

EPSON
PREMIER RESELLER

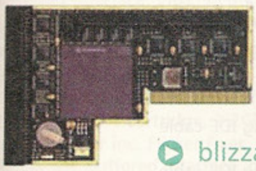


typhoon accelerator card

blizzard 1240 t/ERC turbo

Accelerator card for Tower housed Amiga 1200
Low-cost 68040ERC (EcoReCycling) 40MHz with MMU /FPU, up to 128MB RAM, optional SCSI 2 controller

Blizzard 1240 33MHz MMU & FPU	£139.95
Blizzard 1240 40MHz MMU & FPU	£189.95



blizzard 1260 turbo

Accelerator card for the Amiga 1200 Tower
68060 50MHz CPU with MMU/FPU, up to 128MB RAM, optional SCSI 2 controller, battery backed clock

Blizzard 1260 50MHz MMU & FPU	£299.95

SCSI-kit IV

Fast SCSI 2 DMA controller for the 1230/40 and 1260 turbo board. The SCSI kit is a fast SCSI 2 DMA controller which allows the instant access to large variety of SCSI-1 and SCSI-2 devices. It's 32-bit DMA engine transfers up to 10MB/sec with up to 80% free CPU time. A second SIMM socket allows the memory to be expanded by 128MB. Comes with comprehensive software £69.95

new typhoon accelerator cards

Typhoon Lite 2 68030 40MHz upto 64MB RAM	£69.95
Typhoon SCSI Mk2 - full 68030 40MHz with MMU, optional 50MHz PGA FPU, upto 64Mb RAM, battery backed clock, includes SCSI controller, suitable for all tower systems	£89.95
SCSI Adaptor for MK1 and 2 Typhoon	£19.95
Viper MK2 68030 40MHz upto 32MB RAM	£55.95

hot new products.....



new scroll mouse & adaptor

This mouse allows complete control with one finger, it's unique scroll design makes scrolling the internet and documents a breeze. Other features included are: Easy Jump - lets you open eight special functions, Magic Surfer & Side Button - to alternate between open applications and documents. Includes Mouse adaptor. £29.95

mouse adaptor interface

The mouse adaptor interface plugs directly into the 9-pin Amiga mouse port and converts 9-pin to PS/2 without the need for software. Supports 3 button mouse, mouse wheel and trackball £14.95

blizzard 2040/2060 turbo

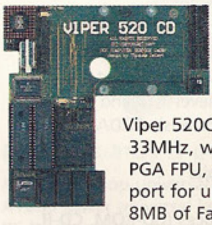
Accelerator card for the Amiga 2000
68040 or 68060 50MHz CPU with MMU/FPU, up to 128MB RAM, on-board 50 pin connector fast SCSI-2 interface, full genlock compatibility

Blizzard 2040 33MHz MMU & FPU	£239.95
Blizzard 2040 40MHz MMU & FPU	£295.95
Blizzard 2060 50MHz MMU & FPU	£369.95

cyberstorm mkIII turbo

Accelerator card for the Amiga 3000 T & 4000 T
68060 50MHz CPU with MMU/FPU, up to 128MB RAM, ultra wide SCSI 3 interface slot for Cybervision PPC GFX card, full genlock compatibility

CyberStorm MkIII 33MHz MMU & FPU	£339.95
CyberStorm MkIII 40MHz MMU & FPU	£389.95
CyberStorm MkIII 50MHz MMU & FPU	£469.95



amiga 500 accelerator card

Viper 520CD, 68020EC 33MHz, without MMU, optional 33MHZ PGA FPU, space for one 2.5"HD, support for up to four IDE/ATAPI devices, 8MB of Fast RAM on board and 3.0 Kickstart ROM including full 3.0 Workbench disk set

FAT Agnus slot to fit Mini Mega Chip	£99.95
Mini Mega Chip (2MB Agnus chip and 1MB extra Chip RAM)	£79.95

new hi-res 3d graphic cards

CyberVision 64/3D (see our web site)	£169.95
Picasso IV with ingrated flicker fixer	£249.95

Picasso Modules - TV-Tuner, Live Capture, Pabloll - video encoder, MPEG decoder and Sound module. Call or see out web site for more details **£POA**

memory modules and fpu's

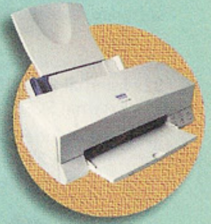
for accelerator and expansion boards

4MB SIMM	£14.95
8MB SIMM	£19.95
16MB SIMM	£29.95
32MB SIMM	£49.95
32MB SIMM (slim for Blizzard 1260 boards)	£79.95
64MB SIMM (Typhoon and all Blizzards)	£139.95
128MB SIMM (Typhoon and all Blizzards)	£199.95
1MB ZIP RAM static column for A3000	£16.95
GVP custom 4MB RAM module	£49.95
GVP custom 16MB RAM module	£99.95
20MHz PLCC FPU	£10.00
33MHz PLCC FPU	£15.00
40MHz PGA FPU	£20.00
50MHz PGA FPU	£29.95

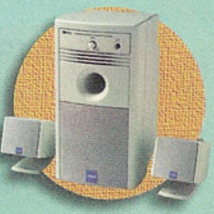
memory expansion UPGRADES

A1208 bare with standard SIMM socket (upto 8MB) with battery backed-up clock (A1200)	£29.95
A1208 with 4MB SIMM + clock	£35.95
A1208 with 8MB SIMM + clock	£39.95
PGA 40MHz FPU for all the above cards	£15.95
A500+ 1MB Chip RAM battery backed-up clock	£19.95
A600 1MB Chip RAM battery backed-up clock	£24.95
A500 2MB RAM with battery backed-up clock	£49.95
CDTV 2MB RAM	£49.95

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SPECIAL OFFER - ONLY £69.95



The new UltraSlim ATAPI CD-ROM drive, complete with 4 way buffered interface and EIDE '99, Allegro CDFS, PSU, Audio In /Out and cables.

amazing hard drive deals

Plug and play hard drive. Includes cable and is already partitioned. All HD's come with a 2yr warranty*



cd-rom, cd-recordable & rewritable

EIDE cd-rom drives

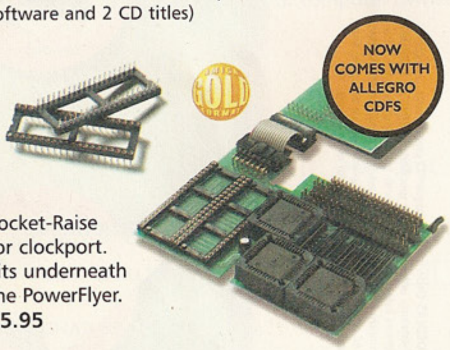
6x Internal ATAPI CD-ROM (bare unit)	£29.95
6x External ATAPI CD-ROM	£65.95
36x Internal ATAPI CD-ROM (bare unit)	£45.95
36x External ATAPI CD-ROM	£79.95
40x Internal ATAPI CD-ROM (bare unit)	£54.95
40x External ATAPI CD-ROM	£89.95

(External drives include Buffered Interface, EIDE '99 software, cables and 2 CD titles)

SCSI cd-rom drives

32x Internal SCSI CD-ROM (bare)	£89.95
32x External SCSI CD-ROM	£149.95

(External includes cables, Squirrel SCSI interface with software and 2 CD titles)



Socket-Raise for clockport. Fits underneath the PowerFlyer.
£5.95

A1200 powerflyer gold edition

Power-Flyer, 4-way enhanced IDE/ATAPI controller, Supports the latest PIO-3 and PIO-4 faster modes, Autoboot from Zip and LS-120, UDMA - 11MB/sec CDFS software, PowerFlyer Gold Edition £54.95

NEW A4000 POWER FLYER GOLD EDITION

new a4000 powerflyer gold edition

- Enhanced IDE/ATAPI controller for ZORRO III bus Amigas
- The first Amiga 3000/4000 E-IDE/ATAPI controller supporting PIO-3 and PIO-4 modes (for up to 16.6MB/sec) and faster UltraUDMA modes
- The transfer is several times faster than any currently available ZORRO II IDE/ATAPI controller
- Fully autoconfig ZORRO III card
- Autoboot from any removable media (ZIP, LS120)
- FastATA'99 - Highly sophisticated supporting software
- Includes Allegro CDFS - the fastest Amiga CD file system, supports video DVD format

On the A4000 two devices canbe attached to a standard IDE controller, and another four to the A4000 Power Flyer. More than one A4000 Power Flyer can be installed at the time. After it has been switched on, the Amiga can boot from any of the Hard Drives connected, either to the Power Flyer or to the Standard IDE controller.

A4000 PowerFlyer Gold Edition £79.95

buddha flash

For all Zorro bus Amigas Zorro IDE controller, upto 4 IDE/ATAPI devices, supports LS120, Zip, Syquest and any removable media. Includes special version of IDEfix97. A1200 clock port £49.95

new image fx and aladdin

Amigas most powerful image software - from £29.95

new cd-rewritable drives

4 x 4 x 20 CDRW ATAPI CD-Rewritable Int.	£219.95
4 x 4 x 20 CDRW ATAPI CD-Rewritable Ext.	£329.95
TwinBox with 4 x 4 x 20 CDRW ATAPI CD-Recordable and 3.2GB IDE Hard Drive	£479.95
Box of 10 CDR discs	£14.95
Box of 5 CDRW discs	£39.95

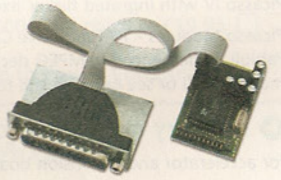
(All the above external bundles include: case, cables. 4-way IDE interface with IDEfix 97 fully registered, MakeCD, 5 x CDR discs and 1 x CDRW Disc)

new allegro cdfs software

- The fastest Amiga CD File System.
- The first Amiga file system to support UDF (the Video DVD format).
- Access to: ISO 9660 level 1, 2 and 3, Joliet (Windows95/98 long name) level 1, 2 and 3 RockRidge (with Amiga Extensions), CDDA, UDF (Video DVD)
- Supports Amiga protection bits
- Supports Multisession
- Supports SCSI and ATAPI devices (CD-ROM, CD-R, CD-RW, DVD)
- Supports direct audio grabbing from standard audio CDs

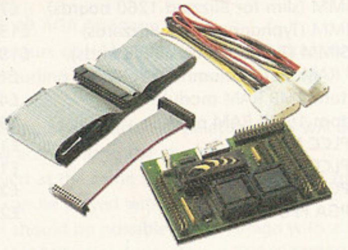
For non-gold edition users Allegro works with EIDE'99 and Powerflyer - available soon

Allegro CDFS only £10



powerport junior

Fast Serial port, upto 460,800 bits per second
32 char. buffer £35.95



catweasel Mk 2

A4000/A1200 advanced floppy drive controller, can use most PC floppy drives £49.95

kylwalda - bootadaptor

To use PC floppy drive as replacement of DF0	£19.95
PC Floppy Disk Drive	£20.00

sundries

Amiga 400DPI Mouse & Mat	£9.95
Boing Mouse & Round Mouse Mat	£9.95
Boing Mouse Mat only	£4.95
CD32 Joypad	£9.95
New 4 way joystick adaptor	£8.95
Original A1200 replacement keyboard (int.)	£14.95
Original A1200 replacement power supply	£9.95

new scala mm400

Multimedia presentation software £55.95

2.5" hard drives

2.5" **160MB** IDE including IDE cable	£49.95
2.5" **810MB** IDE including IDE cable	£69.95
2.5" **3.2GB*** IDE including IDE cable	£129.95
2.5" **4.8GB*** IDE including IDE cable	£196.95
2.5" **6.4GB*** IDE including IDE cable	£209.95
2.5" **10GB*** IDE including IDE cable	£319.95

3.5" hard drives

3.5" **3.2GB*** IDE including IDE cable and install disk	£99.95
3.5" **8.4GB*** IDE including IDE cable and install disk	£149.95
3.5" **13GB*** IDE including IDE cable and install disk	£199.95

Hard drives bigger than 4GB are supported automatically by the PowerFlyer or by IDEfix 97 using the patch provided (an updated FileSystem is available on www.amiga.de). Please note that cables included with 3.5" HD have standard 40pin headers. If you need to connect a 3.5" HD directly to the A1200 motherboard, you will need a 44 high density (2.5") to 40 standard (3.5") IDE 'stack cable' £12.95



new 250MB zip

iomega zip

Zip 100MB external SCSI including Amiga Zip tools, & cable (requires Squirrel or any SCSI interface)	£139.95
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Zip 100MB internal ATAPI (bare unit only)	£75.95
Zip cartridge (100MB)	£12.95
NEW Zip 250MB External SCSI inc. cartridge	£189.95
NEW Zip cartridge (250MB)	£19.95



LS120 drive

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LS120 120MB Internal ATAPI (bare unit only)	£69.95
LS120 120MB External ATAPI including 4 way buffered i/f, EIDE 99 software, IDE cable and 1 cartridge	£139.95
LS120 cartridge	£9.95



floppy drives

A500/A600/A1200 Internal Drive	£34.9
A2000 Internal Drive	£39.9
PC Floppy Disk Drive	£20.0
PC880E External for all Amiga models	£39.9
XL 1.76MB External for all Amiga models	£65.9
XL 1.76MB Internal for A4000	£60.9

scsi controller - squirrel interface

Squirrel PCMCIA - suitable for any scsi-device £39.9